CALIFORNIA
# OIL WORLD
and Petroleum Industry

GUIDING FLOATING REMOVING BRIDGES WASHING FORMATION BETTER CEMENTING DRILLABILITY

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★ **GUIDING** is efficiently done, due to the rounded nose of the concrete guide which leads the casing past all side wall irregularities.

★ **FLOATING** is safely performed due to the efficient Baker BALL-TYPE Back-Pressure Valve which provides a positive, leak-proof seal against either high or low pressure.

★ **REMOVING BRIDGES** and **WASHING DOWN** is an outstanding feature of Baker Cement Wash-Down Whirler Shoes. Circulation fluid passes out of the shoe through a number of baffled side ports, (cut in the wall of the shoe at a downward angle), as well as through a central restricted passage. The resulting downward jetting action washes away the sides and center of the bridge and the formation is readily circulated up the hole as it is removed. As the bridge is disintegrated and washed away, the pipe is lowered through a free hole without danger of being stuck.

★ **WASHING FORMATION** at and above the cementing point, properly preparing the wall of the hole to receive the cement slurry, is another important result. While there is sufficient inclination of the hydraulicking stream to produce a whirling action, it is not forced directly against the wall of the hole, thus avoiding cavings being created.

★ **BETTER CEMENTING** is accomplished by the definite downward as well as upward whirling action imparted to the slurry. As illustrated, this whirling action results in a more nearly complete encasement of the pipe with a uniform body of cement; hazard of channelling is reduced to a minimum.

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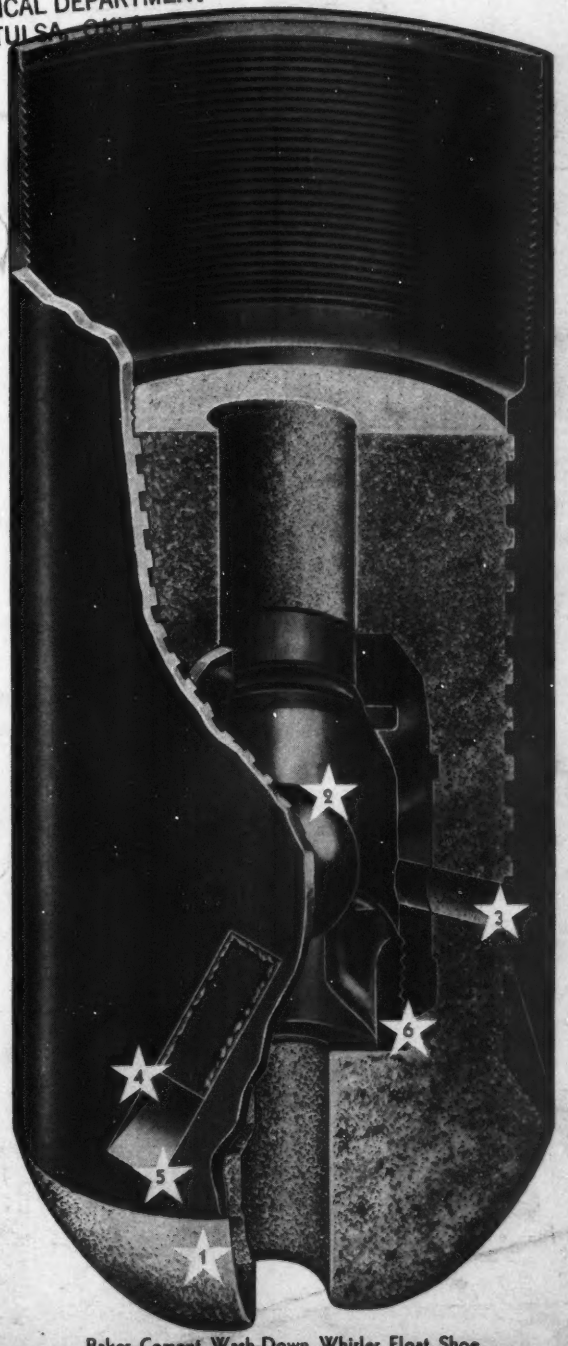


Baker Cement Wash-Down Whirler Float Shoe

**BAKER OIL TOOLS, INC.**

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For Complete Details See the Baker Section in the 1940 Composite Catalog.

Vol. 33
No. 11
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# CAMERON

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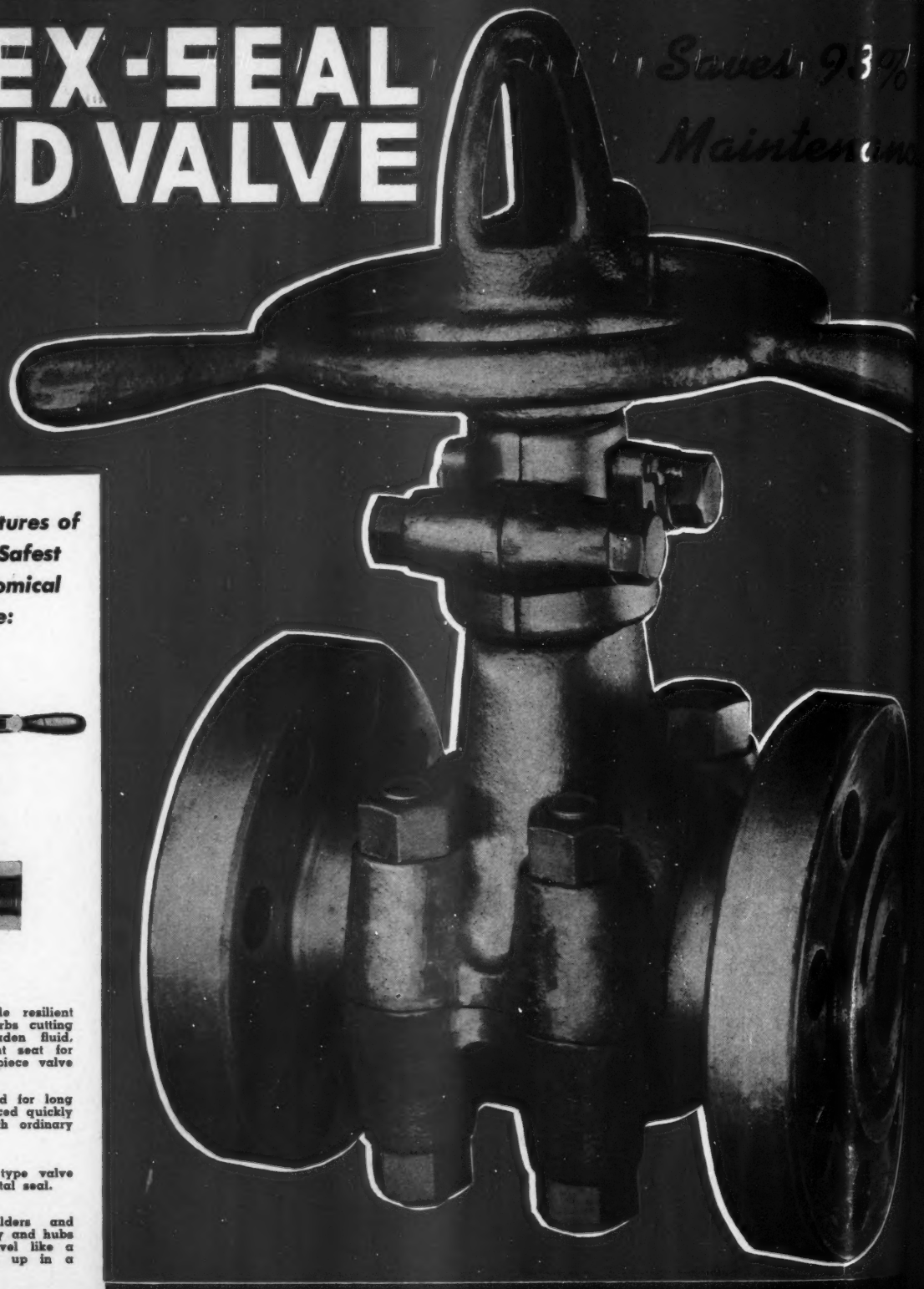
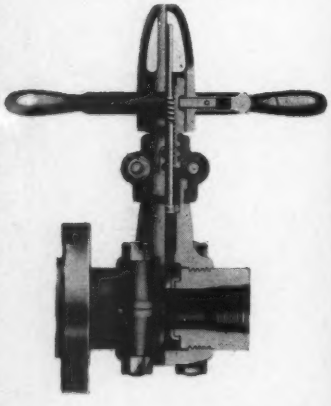
Saves 93% Maintenance



***Check These Features of the Industry's Safest and Most Economical Mud Valve:***



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- √ **Flow-way insert, good for long service, can be replaced quickly by drilling crew with ordinary rig tools.**
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- √ **Interlocking shoulders and grooves between body and hubs permit valve to swivel like a union when making up in a manifold.**
- √ **Forged Steel Throughout. All parts subjected to wear are of heat-treated alloy steel.**
- √ **Available in 2", 3" and 4" sizes; 6000 lb. test.**

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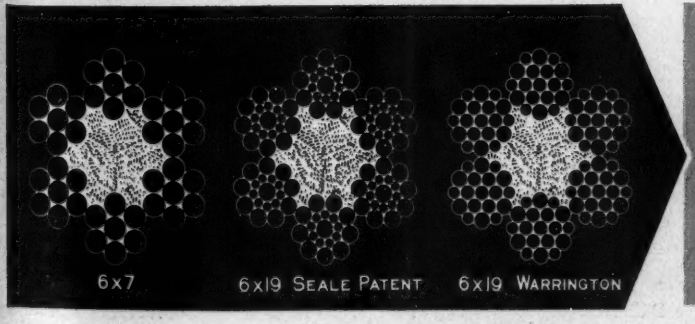
**EXCELLAY *Preformed* WIRE LINES**

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CALIFORNIA
# OIL WORLD
and Petroleum Industry

THE AUTHORITY ON THE CALIFORNIA OIL INDUSTRY

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VIEWS and NEWS

# Refining Topics at Mid-Year A. P. I.

## Visiting Among the Crews

Corrosion problems of the petroleum refining industry, further economies in plant operation, elimination of hazards in the treating plant, and asserted fallacies in the production of "super gasolines" for the average motorist, were among the subjects discussed by recognized authorities at the Tenth Mid Year meeting of the American Petroleum Institute last week in Fort Worth, Texas.

Bubbles formed on water not only are effective in eliminating about 95 per cent of the acid mist in refineries in around 10 seconds, but comprise the most economical medium for doing the job yet devised.

The saga of the bubbles was recounted before the Division of Refining group session by **D. W. Bransky and F. F. Diwoky, of the Standard Oil Co. (Indiana)**, Chicago, Ill., who explained it is no longer necessary to install and to operate expensive electrical equipment to dissipate the white clouds of acid mist which have been causing so much trouble by way of reducing visibility and increasing corrosion at petroleum refineries.

They said the bubbles are formed by adding to water a foam-and-bubble-forming agent known as "green acid," itself a sulphuric acid derivative formed as a refinery by-product in the sludge resulting from the fuming acid treatment of petroleum distillates. Concentrator stack gases are bubbled through a shallow layer of water, large areas of foam and bubbles are formed, and within 10 seconds about 95 per cent of the acid mist is absorbed.

### Pipe and Valve Economies

Formulas for estimating the operating efficiency and methods of reducing operating costs of proper sizes and types of small pipes and valves in various branches of the petroleum industry were presented by **S. P. Johnson and F. L. Maker, of Standard Oil Co. of California**, San Francisco. The speakers reported that they had applied to short process and transfer lines in the industry the same detailed study which previously has been given to long transmission lines carrying oil and gas, and have worked out methods whereby proper size pipes may be selected for the movement of any fluid and the correct size of valves applied to these short lines.

The study was cited as another instance of the continued effort of the petroleum industry to curtail operating and maintenance costs and so effect an eventual reduction in prices of petroleum products. To the established allowable pressure-drop and reasonable velocity methods of determining pipe needs, they contributed several formulas and charts for estimating economic sizes of lines. They presented also methods of determining proper valve sizes which they indicated would permit of substantial savings.

### Filter Clay Studies

Refiners of lubricating oils were told by **L. M. Henderson, C. M. Ridgway, and W. B. Ross, of The Pure Oil Co.**, Chicago, that by proper handling and burning the special clays through which oils are filtered may be used many times without undue loss in filter efficiency. The research workers explained they had studied the individual effect upon the efficiency of filter clays of such variables as water content, porosity, and carbon content, using in their experiments both Florida fullers earth and bauxite.

They reported that the moisture in clays which seriously affects yields was found to be of two types, "adsorbed" water which readily is taken up and given up by the clay, and "bound" water, which is held more tenaciously. The filter efficiency of the Florida clay was found to decrease appreciably if the "bound" water content fell below two per cent, while efficiency declined even more if the clay contains adsorbed moisture.

They recommended that filter clays be kept free from contact with air, or at as high a temperature as possible, to prevent an increase in the adsorbed-moisture content and a resulting haze in the filtered oil. An excess of carbon in clays was said to reduce yields of dark-colored stocks and to impair the casts.

### Use For Waste Heat

Increased power for use in combination cracking units at petroleum refineries can be obtained easily and cheaply by utilizing waste heat for the generation of superheated steam, the Institute learned from **A. E. Harnsberger, of The Pure Oil Co.**, Chicago. Mr. Harns-

With an attendance in excess of 1200 the Sixth Annual San Joaquin Valley Oil Men's Barbecue and Golf Tournament, June 1, at Stockdale Country Club, Bakersfield, proved one of the highpoints of the industry's festive activities.

Of the 258 golfers who took part in the tournament, 240 entered the blind bogey at $1 per capita. The barbecue involved the imolation of more than 1800 pounds of choice steer beef and all the trimmings. Dutch lunch was served from 11:30 a.m. until 3:30 p.m., and the barbecue was served from 6:30 p.m. to 8 p.m.

Numerous prizes were given, both from the golfers and gate ticket stub holders. Refreshments included 32 half barrels of a popular cereal beverage.

Sam Kelly, of Hydril, served as general chairman. Heading the other committees were: Red Radke, golf; Roe Gillispie, barbecue; Ed Meyers, liquid refreshments; Ed Van Fleet, gate; Steve Garasich, publicity; Otto Lamb, lunch. Tex Little again acted as master of ceremonies.

Putting down Pierce No. 1 for Mission Oil Corp., are C. L. Boatright, E. F. Bush, Leo Kosarek, M. P. Boatright, and Pat Larsen.

Over at Chicago Oil Co.'s Foundation No. 1, the cameraman found, left to right, J. D. Bryan, contractor; H. D. Ashcroft, driller; Louis Davis and Thos. Sidwell, of the Chicago company.

berger described the production of 4,050 additional horsepower at a 25,000-barrel cracking unit whose boiler plan already carried a capacity load and enlargement was undesirable.

The waste-heat steam generator was described as a horizontal drum with constant water level, and six tubular exchangers. Recycle oil, topped crude, and residuum are pumped through the exchangers, while water is fed by thermosyphon from the drum into the lower section of the shells. A separately fired unit superheats steam consumed by standard condensing turbines. Individual barometric jet condensers are used.

The speaker reported that the first cost of such equipment runs as low as one-third the first cost of boilers of equal capacity, pressures of around 125 pounds may be used, and the entire operation is both economical and efficient.

It was explained that tests had developed the conclusion that proper adjustment and maintenance of the average automobile was more effective than use of higher-octane fuels, and that it would be unwise to increase octane ratings to 80 from the present average of 74 at an estimated cost of $150,000,000, or almost 40 per cent of the industry's annual earnings.

The tests further revealed, it was reported, that technical difficulties make it impossible to expect success of recent efforts to legislate gasoline quality, which must be measured by performance in automobiles. The information came from **C. H. Van Hartesveldt and H. W. Field, of The Atlantic Refining Co.**, Philadelphia, Pa.

The research workers said their tests, made as closely as possible in accordance with average driving conditions, disclosed that use of gasoline with octanes higher than regularly available made no difference in mileage or acceleration time, and an average improvement of less than two per cent in "long-pull" power. On approximately 40 per cent of the cars there was no difference in knock, on another 40 per cent only a doubtful difference, and a noticeable reduction only in 20 per cent.

"An increased cost of $5 per year for a motor vehicle, if used to pay for mechanical adjustments and tune-up of the engine," said the speakers, "would result in greater owner satisfaction than this same amount of money spent furnishing a higher-octane gasoline."

The story of a survey of public opinion taken through the nose in an effort to obtain consumer reactions to the odor of gasoline was related by **John Happel and S. P. Cauley, of Socony-Vacuum Oil Co., Inc.**, Brooklyn, N. Y., who said that because of the findings of these and other tests it appears advisable for the industry to eliminate expense and trouble by abandoning those processes to which motor fuel is submitted merely to satisfy the requirements of the doctor test. They explained that the doctor test was adopted about 20 years ago to insure the public of getting gasolines having a sweet odor, better color stability, and less possibility of being corrosive. Subsequently new treating processes and new conceptions of desirable gasoline have been developing, and even from the consumer's point of view such performance characteristics as ease of starting, freedom from knocking, and mileage are more important than color or odor.

### Road Tests in the Laboratory

The Institute learned from **Herschel G. Smith, of Gulf Oil Corp.**, Philadelphia, Pa., of progress being made in developing laboratory tests of motor performance on various gasolines which are equivalent to road trials. Mr. Smith presented several formulas, based upon research, which make it possible to predict or to calculate the average motor performance of a gaso-

The cameraman cruised around Wilmington area last week. Over at St. Anthony's Gordon No. 2 he found, left to right, C. A. Triplett, Chris Mathewson, J. D. Harmon, L. C. Morris and M. H. Scales, drilling ahead.

What have you accomplished if you are not sure the surveying records placed before you are accurate? How much time—how much money is involved? Does it pay you to buy anything but the best?

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Lunch hour and a brief respite from Southern California Petroleum Corp.'s Rowena No. 2 came to Driller Marvin Hughes, A. Adams, L. J. Menichini, K. M. Paige, and Paul Kornfeldt.

line when certain laboratory routine test data are available.

It was suggested that these formulas and their explanations would tend to answer or clarify many questions of the petroleum industry and of gasoline consumers as to the reasons for variations in the performance of motor fuels of various types as employed under different operating conditions and thus contribute to progress in the correlation of physical test data. Extension of the use of such conversion formulas was said to have considerable economic value to the petroleum industry as affording easy means of converting motor fuel test values derived from one method to results by another, in avoiding obsolescence of earlier research and experimental data, and in reducing the amount of testing work which must be done.

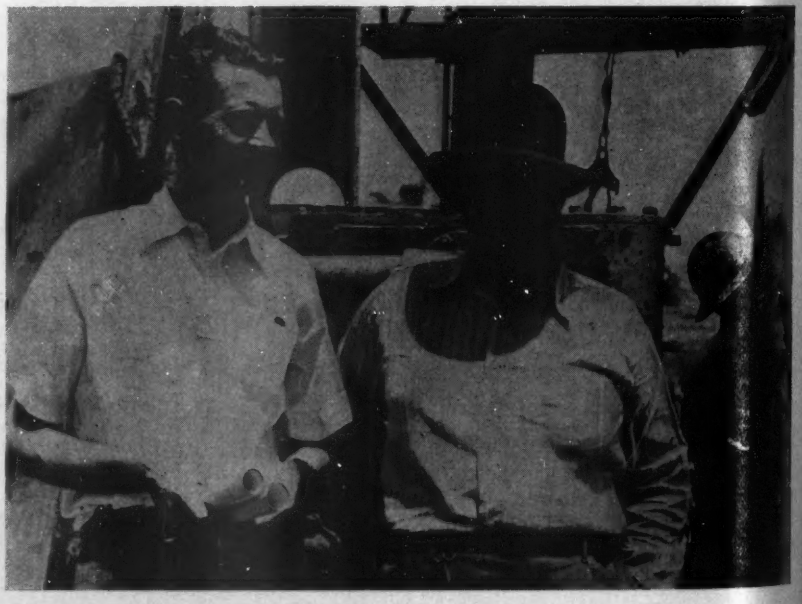
The tests reported were based upon the AIL, or "acceleration-inertia-load" method, which permits of simultaneous study of the performances of motors used in popular makes of automobiles. Mr. Smith reported that the efficiency of motor cooling systems and the outlet temperature of the water appeared to be important factors affecting the road performance of motor fuels, especially because of the winter use of automobiles and the increasing consumption of gasoline produced by cracking processes. It was said that the octane requirement for satisfactory operation would drop one whole octane number with each successive drop of 10 degrees in cooling water outlet temperature. Even the use of anti-freeze preparations was found to effect motor performance, the tests showing that the increase in octane number requirements ranged from one for a 37 per cent solution of ethyl alcohol in water to about three octane numbers for a 50 per cent solution.

Corrosion both by oil and water of copper and alloy tubing used in refinery heat-transfer equipment has been costly not only through destruction but through loss of operating time caused by the necessity for repairs, the Institute learned from **R. A. Wilkins, E. S. Bunn, and W. Lynes, of the research department of Revere Copper and Brass, Inc.,** Rome, N. Y. Warning that the problem has become intensified in recent years and may become increasingly acute, the research workers ascribed the difficulties to increased production and refining of crude oils with higher sulphur content, wider employment of higher temperatures and pressures in refinery operations, increase of temperatures and velocities in heat-transfer equipment, and the use of corrosive waters for cooling.

The research workers said that the amount and speed of corrosion depended not necessarily upon the sulphur content of crude oils, but upon stability of the sulphur. Some oil of higher sulphur content caused less corrosion than did oils with a smaller amount of sulphur, apparently because of the greater stability. Explaining that sulphur exists in a diversity of forms, including free sulphur, hydrogen sulphide, mercaptans, alkyl sulphides and disulphides, and thiophene, they declared experiments have shown the sulphur, hydrogen sulphide, and mercaptans to be particularly active in corrosion.

### Use of Copper Alloys

Extended use of copper alloys in refining equipment was recommended by **James T. Kemp, of The American Brass Co.,** Waterbury, Conn., as being helpful in combatting corrosion. Pointing out that oil refiners use comparatively few of the large number of copper alloys now available, Mr. Kemp suggested that tests be made in actual service because of the extreme difficulty of reproducing service conditions in the laboratory. He said both experiments and service were indicating the possibility of making greater use of aluminum brass, especially in refineries utilizing sea and bay water for cooling purposes, and of certain nickel



Don Angle, head of Mission Oil Corp., is talking over the situation with the contractor, C. C. Boatright, of Boatright Drilling Co.

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Time out for a second for Fred Fuller, Dan Pierce and E. F. Edmonds, drilling Thos. Kelly & Sons McMillin No. 3.

alloys already finding favor for use in "hot spots" and for emergency repairs.

**Corrosion Tests**

Efforts of the industry to test materials before they are put into service were described by **N. W. Mitchell, of Chase Brass & Copper Co., Inc.**, Waterbury, Conn., who said it is possible now to evaluate various alloys in a relatively short time and to obtain advance information as to their probable behavior. He described tests made cooperatively by users and manufacturers, declared that corrosion of tubing may be ascribed chiefly to water and sulphur or sulphur compounds, and suggested that measurement of tensile-strength losses are more satisfactory than measurement of feight losses for estimating corrosion resistance.

Describing tests of such materials as antimonial admiralty, red brass, cupronickel, aluminum brass, muntz metals, and nickel-aluminum, Mr. Mitchell revealed that the materials had been subjected to corrosive effects for as long as 163 days in vapor lines, six months in condenser shells, five months in caustic exchanger, nine months in experimental condenser in contact with gasoline vapor, and 13,896 hours in flash-tower overhead condensers. In each case the values of per cent of original tensile strength lost by corrosion were measured, and it was found that in cases of sulphur attack admiralty alloys with copper content were more resistant than red brass. Antimonial admiralty was reported as being immune to dezincification and to have marked superiority in resisting water corrosion.

**Elminating Causes of Corrosion**

A study of conditions causing corrosion was advocated by **R. W. Moore and S. Kleinheksel, of Socony-Vacuum Oil Co., Inc.**, Brooklyn, N. Y., in a paper covering testing of non-ferrous alloys for condenser tube service. Admitting that ascertainment of conditions leading to corrosion and modification of operations to prevent or diminish it constituted no simple or easy problem, they declared that merely to study the effect of corrosion is following the course of least resistance.

They reported that efforts to prevent corrosion had been made in the line of cold water de-aeration to reduce the oxygen content of cooling water, the use of chromates, and application of cathodic protection. They said that cleanliness and longer life had resulted from the introduction of fresh water into the vapor stream before it enters the condenser, primarily to reduce the accumulation of ammonium chloride. Belief was expressed that such efforts are becoming increasingly necessary since recommended corrosion-resisting materials now generally are used, and since most condenser tube failures have occurred from the vapor or petroleum side of the tubes.

**Cathodic Protection**

Application to refinery equipment of cathodic protection utilized in power plants for 30 years was discussed by **W. A. S. Wright and J. H. Brooks, of Union Oil Co. of California,** Los Angeles, Calif. They reported that tests made at a California refinery using brackish bay water for cooling had permitted 14 to 16 months of operation without tube failure.

The speakers said that several changes had been made in operating conditions, including substitution of admiralty tubes for red brass, use of strainers in the salt-water line, and a more rigid inspection and cleaning program, and consequently it was impossible to determine just how much of the increase in operating life might be due solely to cathodic protection. They reported that screening was not entirely effective, and that the application of cathodic protection to four new fresh-water coolers, tubed with admiralty brass and operating on salt water from the same source, had been in service 16 months without tube failures.

Findings in tests made of brass alloys to determine resistance to dezincification were reported by **F. M. Barry, of Scovill Manufacturing Co.,** Waterbury, Conn., who said that the addition of phosphorous, antimony, or arsenic to admiralty metal definitely inhibits dezincification under conditions encountered in the 50-week tests.

●

A Well Illustrated

Article Covering

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By Wallace Sawdon

for the 2nd Issue

June

of California Oil World

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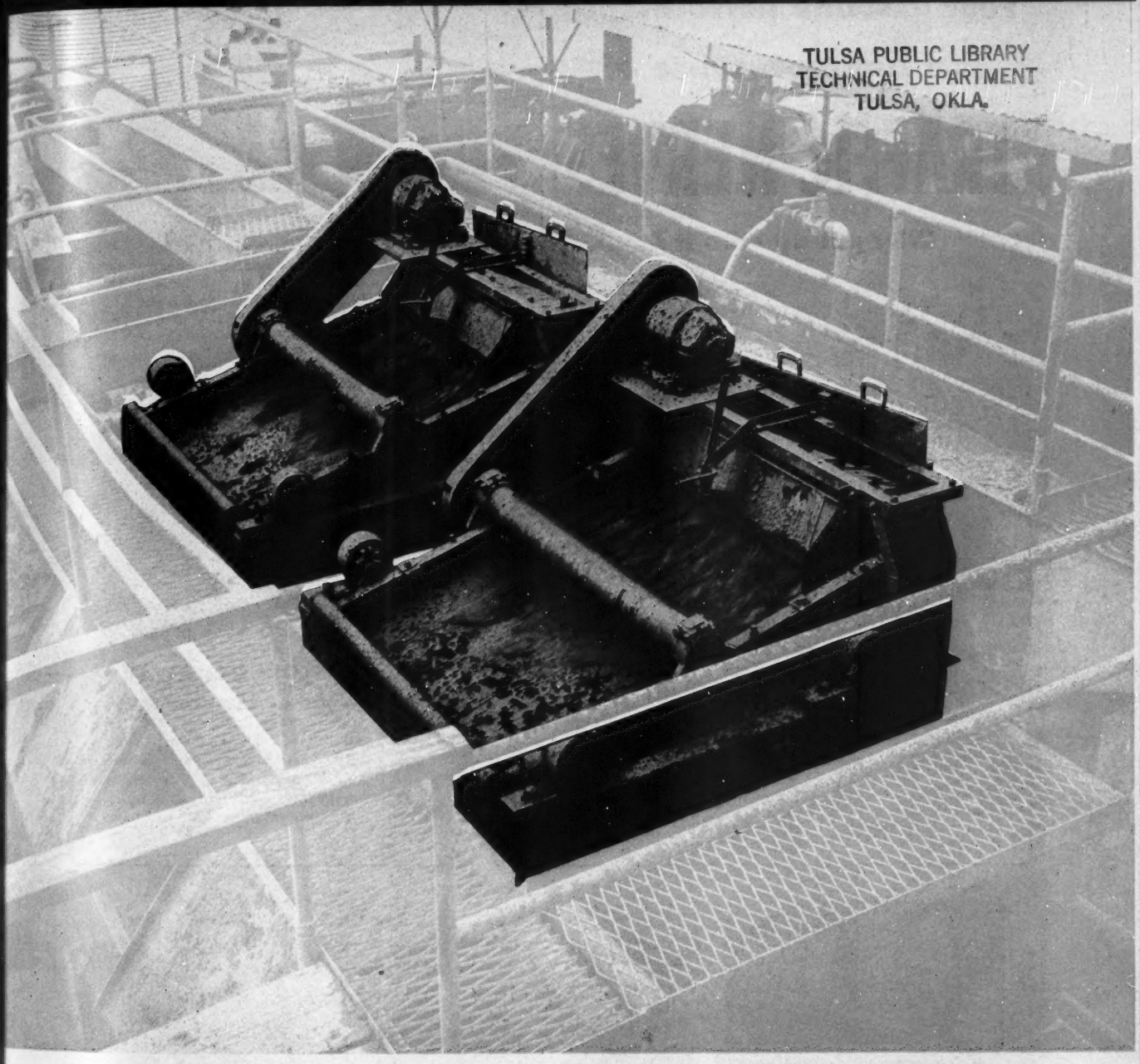

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# Poor gasoline performance is a common cause of

# TRAFFIC NERVES

**Why put up with it?**

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When your motor fails you in a tight spot — on the highway, or in traffic — the nervous shock may send your pulse as high as 50% above normal. This was proved in scientific tests. NEW 76 gasoline will help you avoid these shocks because it is rich enough in power fractions to whip you out of tight spots when danger threatens.

### STALLING AND BUCKING

Tests show that stalling in traffic flusters the average driver so badly his pulse will jump to 35% above normal. Because NEW 76 is *designed especially for traffic*, it gives you steady, even combustion — won't stall, won't falter.

### PING

Ping contributes to your "Traffic Nerves" in two ways. It adds to the steady drip, drip, drip of tiny noise impacts upon your nervous system. It makes you shift gears far more often than is necessary. NEW 76 is high enough in anti-knock to give you a s-m-o-o-t-h, quiet motor; eliminate unnecessary gear shifting.

### SLOW GET-AWAY

Slow get-away at signals makes you push forward in the seat. You want to *lift* the car along. You're tense. You don't relax. NEW, traffic-blended 76 is volatile enough to overcome this. It responds *right now*—makes your car *flexible*, easier to handle.

### HOW "TRAFFIC NERVES" TESTS ARE MADE

Early this year Dr. George H. Mount made a series of "Traffic Nerves" tests. By checking drivers' physical reactions, he found that the causes of "Traffic Nerves" could be accurately measured. It was these tests that led to the development of NEW traffic-blended 76 gasoline. Picture shows test car and apparatus used.

## UNION OIL COMPANY

### FREE at Union Oil Stations. Get your copy of this Valuable Book

The Union Oil Traffic Clinic, founded as a result of Dr. Mount's tests, has published a 32-page booklet, "How to Reduce Traffic Nerves," which you may obtain free at any Union Oil station. It is crammed full of facts and helpful suggestions — how to time signals, what to do about irritating noise, how to improve vision, how to sit at the wheel, and many other ingenious tips. Get your copy of this FREE book today.

1890, INDEPENDENT
1940, STILL INDEPENDENT

**Traffic Nerves Tests Showed Need for New-Type Gasoline**

Dr. Mount's tests showed Union Oil engineers the need for a new-type gasoline. NEW 76 is the result—a gasoline designed *especially for traffic*. Try it next time.

# Economies On Steam Drilling Rigs

## In California Oil Fields

By R. T. Watkins, Sales Engineer, California Division, Oil Well Supply Co.

The deeper drilling and strict proration of California oil wells with the consequent greater expense and longer time to pay out has placed drilling on a basis of economies. Most major companies have been steadily enlarging their drilling equipment for the past several years. The initial investment is not only larger but the demand for available horsepower has increased enormously. Larger and consequently more powerful machinery has made fast drilling of the deeper holes possible. However, the decreased revenue from the producing well makes it necessary to economize on every possible operating expense while drilling. During the past three or four years we have seen the total steam demand for rigs increase from approximately 20,000 lbs. per hour of water evaporated to as much as 60,000 or 70,000 lbs. per hour. Gas consumption has increased from approximately 500,000 cu. ft. per day to peaks of 2½ million. While the size of boilers has increased, it has been necessary in most cases to add more units to the steam plant in order to meet peak demands. Certain locations, as always, lack sufficient quantities of good water and the large amount of gas used has obviously added to the general operating expense. Consequently a number of operators are now giving considerable thought to means of conserving steam without penalizing drilling speed.

The following points each offer an opportunity for appreciable heat conservation:

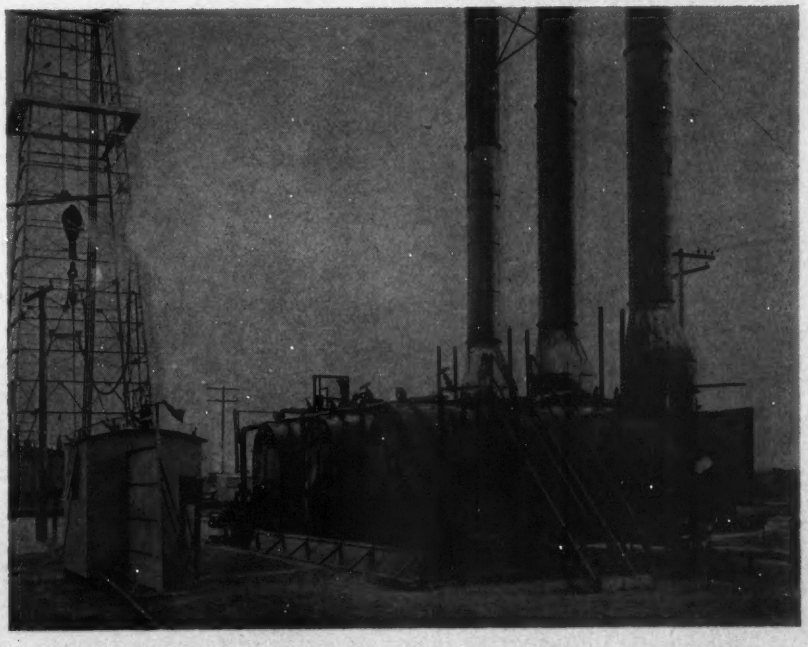
1. Feedwater Heating
2. Boiler Heating
3. Superheating
4. Slush Pump Prime Mover
5. Rotary Prime Mover
6. Boiler and Steam Line Insulation

### Feedwater Heating

Although the practice of heating the feedwater in the drilling rig boiler plant has become general, the results obtained are not always successful. This is undoubtedly due to the difficulty of obtaining a heat exchanger of sufficient capacity without being large and cumbersome. This is particularly true of the closed type heater which usually consists basically of a coiled pipe in the discharge line from the feed pumps, this coil being placed inside a large pipe or shell to which steam from the pumps and engines is admitted for heating the water by conduction. The more general use of water treatment has had a tendency to prevent deposits of scale in the closed heater which formerly was a source of considerable trouble.

Certain manufacturers have offered the so-called open type heater. This utilizes the principle of the jet condenser and in it the cold feedwater is sprayed through a spring loaded valve and comes into direct mixing contact with exhaust steam from the feed pumps augmented by exhaust from the mud pumps. The open type heater offers certain advantages over the closed type. First, it has a greater capacity for heat exchange per pound of weight or bulk. Secondly, it will condense and recover the exhaust steam used for jetting and heating of the feedwater, resulting in a return of approximately 15% of total steam generated as distilled water, thus reducing the amount of raw water used and resulting in cleaner boilers.

Another claim made for the open type heater is the elimination of temporary hardness of certain water. The elements of temporary hardness in most water are precipitated at about 200° F. With the open type heater a portion of these precipitates forms scale in the heater chamber and the remainder passed into the boilers as a sludge which does not scale the tubes but settles into the water legs from which it is blown out. Scale in the



"Oilwell" Superheated Steam Generators with Short Tube Construction. At Wasco, California.

heater chamber of the open type heater does not impair its efficiency and may readily be cleaned out.

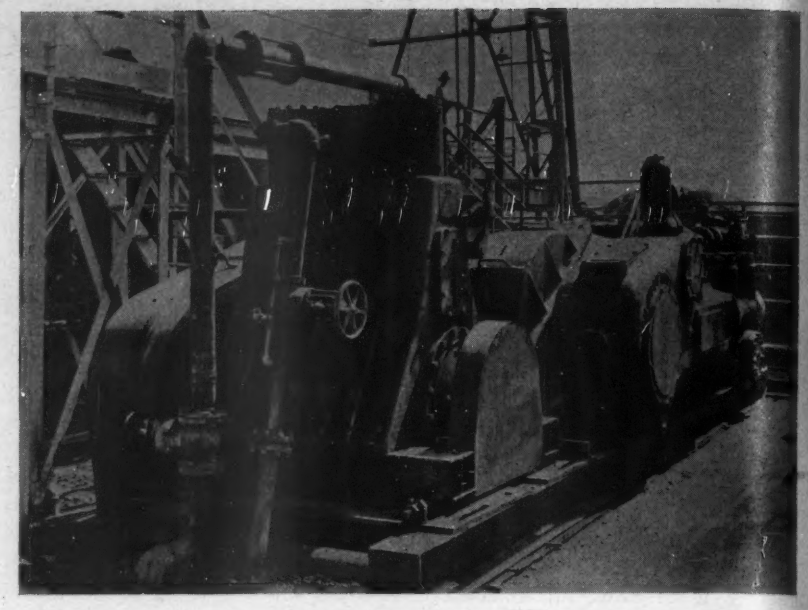
Regardless of the type of feedwater used, it is important to utilize one with sufficient capacity in heat exchange to heat the water to a degree closely approaching the boiling point. However, care must be taken that excessive back pressure is not built up on the exhaust of pumps or engines furnishing the steam for heat. It is apparent that material economies are possible with feedwater heated to 210° F. as it requires approximately 13% less heat to convert it into steam at 350 lbs. pressure than to convert feedwater at 55° F. into high pressure steam. The intangible saving on boiler maintenance is also a factor. Feedwater approaching 210° F. does not create strains in the boiler as occurs with the injection of cold water.

### Boiler Efficiency

The increasing steam demand on the boiler plant has necessitated changes both in design of boiler and their operation. The adoption of 350 lb. pressure for deep drilling is quite general although in one instance 500 lb. pressure is used, therefore, manufacturers have adopted the practice of designing all machinery for 350 lb. working pressure. The general use of the higher steam pressures increases the output of the prime movers on the rig without the necessity of using large cylinders with consequent increase in mass and cost.

Although boilers have increased materially in size and weight in the last few years, they are also fired at a higher rate or percentage of their nominal rating. This is particularly true of the short tube type of construction. For many years it has been the custom of nominally rating the capacity of boilers on the basis of ten square feet heating surface per boiler horsepower. This method is inaccurate as tests have shown that with the usual draft conditions available, the last four to six feet of the tube bank in boilers having tubes twelve to fourteen feet in length is of little benefit from steaming capacity standpoint. One manufacturer introduced a boiler that has 3″ tubes of only eight foot length. It is obvious that such short tube construction when used in a conventional design would result in relatively high smoke box temperatures at high rate of firing. However, in this particular design, the hot gases are diverted through a superheater box and pass over banks of steam filled tubes in counterflow. The steam is superheated as high as 150° F. or up to 200° F. The short tube construction makes high rate of firing possible and the use of the hot gases in the superheater element results in a high overall efficiency. The elimination of excessive length reduces the total weight and increases the portability of the plant.

Most modern boiler plants are mounted on skids with burners, headers and piping attached to facilitate rapid installation.



Vertical twin-cylinder steam engine, 10″ x 9″, driving 7¾″ x 20″ power slush pump at Wasco, California.

### Superheating

The use of superheated steam has proven to be essential to the overall efficiency of the boiler plant and the operation of equipment on the rig. Several methods of superheating have been used but the integral type superheater is one most generally accepted. This is due to the fact that this type does not require outside source of heat and will handle greater volume of steam with the required degree of superheat. The specific volume (cubic feet per pound) of steam at 350 pound pressure with 100° F. superheat is 1.507. With superheat of 200° F. at 350 pound pressure the specific volume is 1.65. Hence it is apparent that sufficient superheat should be carried in order to gain the full benefit of the superheated steam at the higher pressures. In any comparison of saturated with superheated steam, it is obvious that more work may be obtained with the latter. The specific volume of dry saturated steam at 350 lbs. pressure is 1.271, that of 350 pound steam with 200° F. superheat is 1.65, or an increase in volume of 30%.

The use of superheated steam results in notable operating improvements on the drilling rig. With saturated steam considerable condensation occurs in a long steam line from the boiler plant to the rig. The length of this line has been increased materially due to the practice of one battery setting for two or more

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well locations. With the use of superheated steam, line pressure drop will not be as high with the result that more power is available at the prime movers. The machinery operates more efficiently, lubricates more effectively and responds to heavy demands more promptly when supplied with dry or superheated steam.

**Slush Pump Prime Mover**

The one unit of drilling equipment offering the greatest possible point of economy is the direct acting duplex steam pump which is unavoidably most uneconomical in the use of steam. This type of pump has no provision in the valve gear for cutting off the admission of steam prior to the end of the stroke as no flywheel effect is available. As a result it is not possible to utilize the expansive force of the steam and the steam required is measured entirely by the volumetric displacement of the steam pistons. The resulting steam consumption of the direct acting duplex pump is, therefore, approximately 60 pounds per hydraulic horsepower per hour. Theoretically, a duplex steam pump, size 16¼x7¾x20, operating at 1000 lbs. per square inch pressure and displacing 771 gallons per minute, will consume 20,800 lbs. of steam per hour.

In order to effect economy, the most practical and successful means is the use of a power pump driven by a twin cylinder high speed vertical type steam engine by means of V-belt transmission. The vertical engine offers the opportunity of applying a variable steam cut-off, the use of which, at the percentage of stroke required for the operating load, enables the engine to operate at peak efficiency as it will take full advantage of the expansive force of the steam. In practice no change is made on the throttle valve as the variable cut-off compensates for the varying loads. Steam consumption of a 10x9" twin cylinder vertical engine when driving a 7¾x20" power pump is approximately 40% less tnan the corresponding size direct acting steam pump, and when it is realized that about 65% to 70% of the total steam generated for the drilling rig is used by the direct acting steam pump, it is apparent that a saving of 40% is real heat conservation.

The initial cost of a power pump with the prime mover is considerably higher than the direct acting pump; however, the excess steam required for the latter demands at least one more boiler in the power plant. When the cost of this item plus the cost of the replaced direct acting pump is deducted, the differential is not large; in fact, under present operating conditions, the saving in gas alone will make up the difference in cost in the drilling of two deep wells. There are naturally many other economies that may be applied to the additional cost of the power pump such as maintenance on the extra boiler, installation cost and transportation.

**Rotary Prime Mover**

For many years it was the universal practice to drive the rotary table with the hoisting engine through chain drives from engine to hoist and from hoist to rotary. The power required to operate the rotary is relatively small compared with the hoisting engine capacity, and the engine, therefore, is operating at a very uneconomical load factor, which is especially true if the engine is not equipped with a variable cut-off so that the expansive force of the steam may be utilized. In order to correct this condition various individual drives to the rotary have been developed, one of which consists of a horizontal type twin steam engine placed under the derrick floor with a chain drive to a counter shaft, thence a chain drive up to the rotary pinion sprocket. In order to obtain the high rotary speeds the transmission is "stepped up," consequently a larger engine is required to obtain the necessary torque of lower speeds. This type of drive, therefore, does not lend itself to steam economy.

Another method of rotary drive

Right: Direct Connected Rotary Drilling Unit with 10" x 9" Vertical High Speed Engine. Left: Vertical Steam Engine with Variable Cut-off Control.

Link-Belt rotary chains are packed in dust proof wooden boxes for convenience in shipping and handling in the field and to keep them clean and free from dirt, grit, abrasive matter, rust and corrosion. The boxes are labeled for ready identification of chain.

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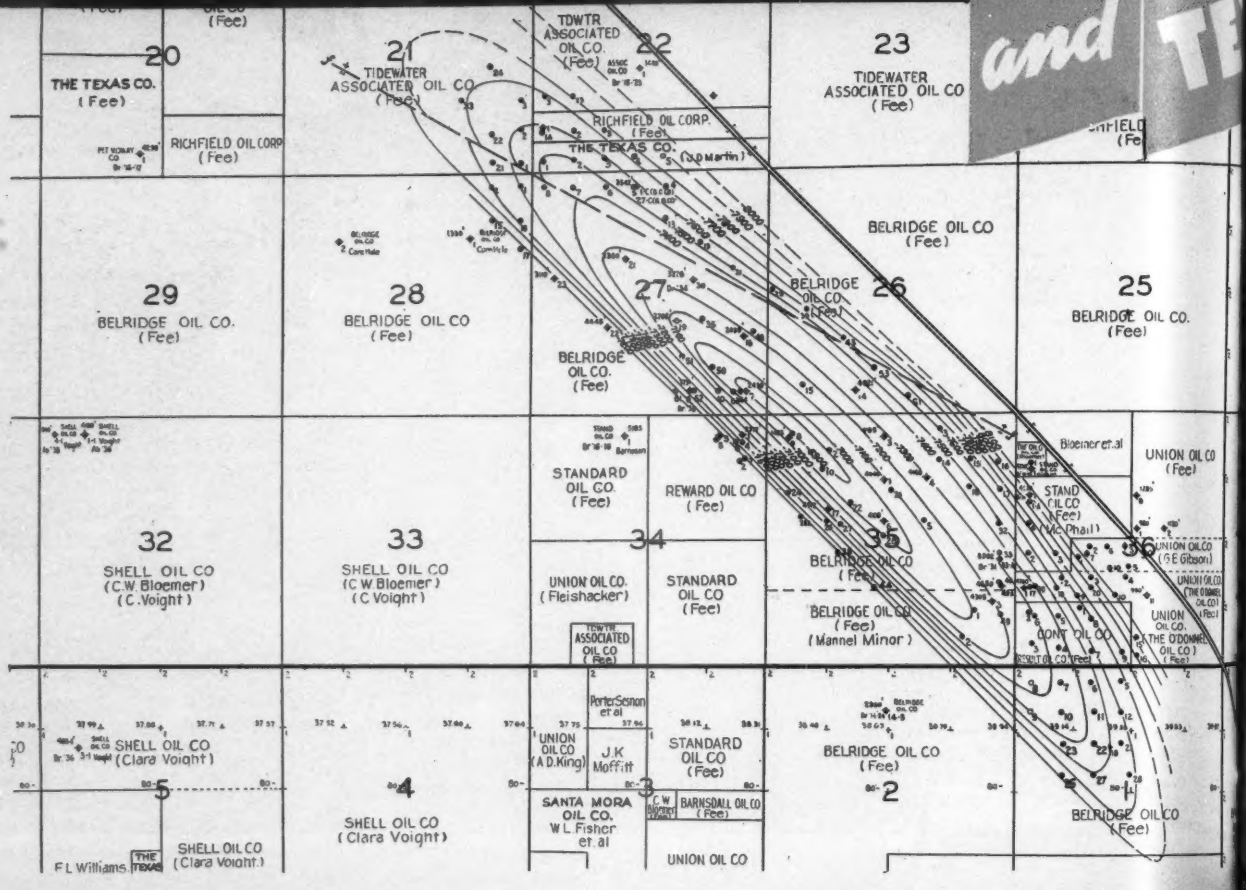
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In response to your enthusiastic reception of the large MAP SECTION included in the 1939 edition of the CALIFORNIA OIL WORLD DIRECTORY, we are including an even greater section in the 1940 edition, now in preparation.

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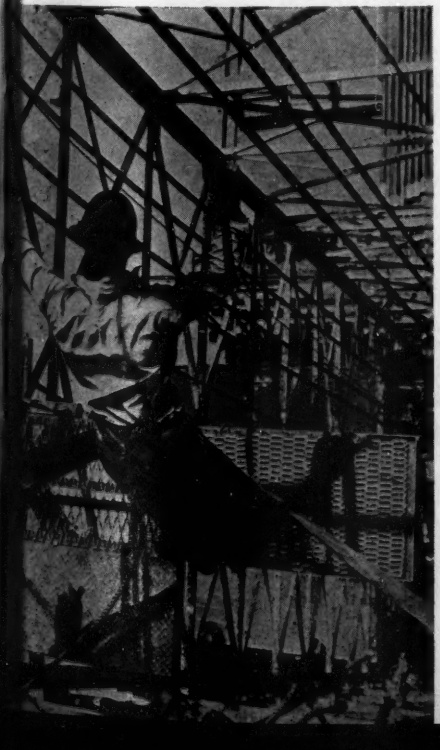

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consists of a twin cylinder vertical engine direct connected through a two speed gear box to the rotary pinion shaft, the engine being equipped with a variable cut-off so that full efficiency may be obtained at any speed and the gear box providing direct ratio or a step-up ratio of 2:1, 3:1 or 3.6:1 as desired. Actual field tests have indicated that it is possible to attain approximately 20% steam saving in the use of this method over the conventional rotary, it being estimated that the engine on the hoist with a conventional rotary drive consumes approximately 30% of total steam generated. Hence, by use of the individual drive, a direct saving of .20x .30 or 6% is effected. The direct drive has several operating advantages such as elimination of chain costs, easier spudding, less strain on the drill pipe, and reduced maintenance on the hoist. In addition, by virtue of its lack of noise as compared to the conventional chain drive, it offers an opportunity to lessen fatigue strain on the drilling crew.

### Insulation

Due to the fact that a single boiler installation is used to drill two or more wells, it is possible to use more efficient insulation on the plant and steam lines. Several types of insulation are available such as sectional metal-clad and plastic material, each of which offers material conservation of heat. Various tests have been made which definitely indicate a direct saving of 15% when the boilers and steam lines are properly insulated, and the insulated boilers will have less tendency to leak at the stay bolts resulting in lower maintenance costs.

### Summary

From the foregoing it is apparent that there are almost unlimited possibilities for heat conservation on the present conventional drilling rig and by putting into practice the methods and equipment as outlined above, actual field experience has demonstrated that wells deeper than 13,000 feet may be drilled with an average gas consumption of 629,000 cubic feet per day which, when compared with one and a half to two million cubic feet per day, it is clear that a considerable part of the fuel and water expense may be saved.

As a recapitulation of heat conservation we find:

| Item | Fuel Saving (Percent) | Water Saving (Percent) |
|---|---|---|
| Feedwater Heater .. | 13 | 15 |
| Superheater ..... | 10 | 15 |
| Engine Driven Slush Pump..... | 40 | 40 |
| Separate Engine Driven Rotary.... | 6 | 6 |
| Boiler and Steam Line Insulation .. | 15 | 15 |

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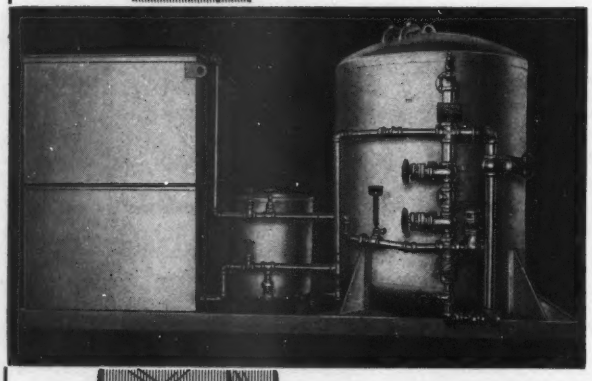

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Typical Refinite oil field water softener installation showing exclusive "salt saver" regeneration unit at left. Complete unit moved easily on skids. Often saves its entire initial cost on a single drilling operation.

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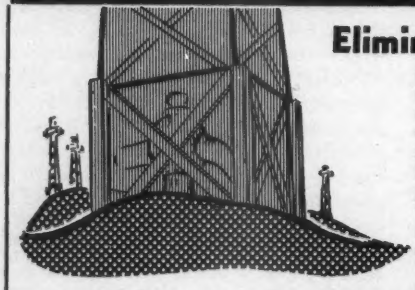

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# LAUGH THIS OFF

"When you see so many motor cars on Wilshire Boulevard at 5:30 p.m.," says **Bob Roberts,** "it's hard to believe there are only 30,000,000 of them in the United States."

Bob also swears that a Bakersfield oil man recently received a frantic telephone message from his wife saying their little boy had fallen down the well. He jumped into his car and dashed home, stopping only long enough on the way through town to buy a book entitled, "How to Bring Up Children."

While we are in Bakersfield, **Eddie Phelps** tells us about a lad up in that vicinity who quit his job a few days ago because it took too much of his time.

Changing the subject now, **Irv Stockton** contends that some girls are good and some girls are bad, and it is seldom that a roustabout is caught with the goods.

**Ernie Blanck,** on the other hand, thinks it's too bad that the average oil man never gets excited about a thing until he finds it is none of his business.

That sort of curiosity is usually attributed to the ladies. Some time ago when there was a great controversy over the entry of women into public affairs, one columnist said, "Sure, let our women go into public life, there is no better way to make it public."

The Union Oil Company golf tournament has been over for almost a month, yet when they cut the rough at Baldwin Hills only last week, they found **Freddy Jonas** still looking for his ball.

Freddie is one of the most consistent quartet organizers in the oil industry, and has created more discord than a beginner on the violin.

Which recalls an old yarn of **Duke Wathan's.** A group of oil men attended a dance in Maricopa one night. At the intermission an official walked over to them and said, "Any of you lads know anything about music?" One of the boys answered "Yeah." "Okay," says the official, "Come on over and help me move the piano."

And we are told that the following ad appeared in a Valley paper: "Gentleman with half bottle Vermouth would like to meet lady with half bottle dry gin. Object—cocktails."

Now comes **Scotty Connelly** telling us that the split pea is a Scotch invention.

Scotty will be remembered as the lad who first described a blotter as "a thing you look for while the ink is drying."

**Gene Hill** next pops in with a word of commendation for the refrigerator which, he claims, has completely banished the old Sunday morning debate about who was going to get up and empty the drip pan.

And perhaps we have already told you of the conscientious boy who emptied it every morning and filled it up with fresh water.

"Here I've been ringing and ringing for you," said the boss, in exasperation. "Why didn't you come?" "Shucks," answered the blonde steno, "you kept on so regular I thought it was just the phone."

With the opening of another session of racing at Inglewood we can't help repeating **Harry Lee's** story as a warning to all addicts: The oil man had just seated himself in the chair at the barber shop when the barber flicked his razor a couple of times and remarked, "The boss always fines me a quarter when I cut the customer's face, but I don't care today, I just won four bucks on the first race."

Times are getting tough in the oil business again. According to **Eddie Kinnebrew,** a once wealthy couple up in Taft have been obliged to sell their watch dog and are now doing their own barking.


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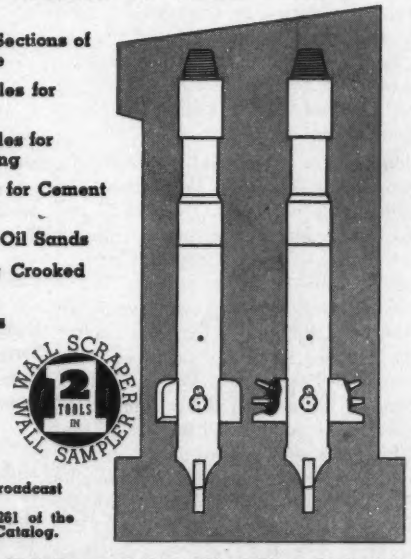


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# Field Development

## San Joaquin Valley

### Rio Bravo Activity Takes Sudden Spurt

Location of 7 new projects in the Rio Bravo field is the cause of heightened interest by operators holding leases northwest of current production.

Moving more than three-quarters of a mile northwest of its Osborn No. 3-1, nearing completion and the most northwesterly of the drillers, Superior Oil Co. has located Riggs No. 1 in the southwest corner of sec. 21,28-25. In sec. 27,28-25, Superior is drilling Roe No. 2 at 7015 ft. and has located Mandel No. 1 near the east quarter corner of the section. Superior's activity in section 28 is represented by foundation for Obsorn No. 1-1, and near production in Osborn No. 3-1 which was last reported in Rio Bravo sand at 11,365 ft. after setting water string over the zone at 11,210 ft. Also in section 28 is Superior's driller Rudnick No. 2 and location for No. 3.

Union Oil Co. is also well represented in Rio Bravo drilling. In section 27 Union has located Kernco No. 76-27 as a test of suspected east edge conditions. In section 34, Union completed Kernco No. 45-34 from 11,470 ft. flowing 1629 bbls. of clean 40 gravity oil through a 24/64-in. bean along with 1,608,000 cu. ft. of gas. Union's 56-34 is digging at 9295 ft., No. 63-34 nears pay dirt at 10,895 ft., 65-34 is being rigged for the drill while location is annnouced for No. 67-34.

At the south edge of the field General Petroleum Corp. has spudded Caldwell No. 5. Rig was built for this project in the southeast corner of section 35 during May 1939 and has been awaiting the drill until last week.

### Cantua Creek Well Seeks Water Source

The Texas Co.'s S. P. No. 1, located in sec. 23,17-15 of Fresno county, ran a water locating device, an operation necessitated by the volume of salt water obtained in production tests, and returned to production flowing 7 bbls. of condensate, 33 bbls. of water and 340,000 cu. ft. of gas.

Bottomed at 10,116 ft. and plugged back to 9413 ft., with 413 ft. of 5-in. liner landed on the plug and cemented through perforations at 9335 ft., the well initialed an estimated 3,000,000 cu. ft. flow of gas along with an estimated 200 bbls. of salt water. Subsequent flows yielded gas at a 750,000 cu. ft. rate with 78 bbls. of salt water and 4 bbls. of condensate through a 2/64-in. bean under 690 lbs. tubing pressure and 1185 lbs. casing pressure.

Top of the Eocene section was found at 8775 ft., and what is called Gatchell equivalent sands at 9345 ft.

Northwest of this well, in sec. 26,16-14, J. E. Logan is drilling Yearout No. 44 at 6795 ft. Last reported in hard gray sand, the drill marked a few oil sand streaks at 6045 and 6390 ft.

**SAN JOAQUIN VALLEY WILDCATS**

| Area | Well | No. | Section | Depth | Status |
|---|---|---|---|---|---|
| | **Fresno County** | | | | |
| Cantua Creek | Logan, J. E., Jr., Yearout | 44 | 26, 16-14 | 6800 | Drilling |
| | The Texas Co., S.P. | 1 | 23, 17-15 | 10116 | Testing |
| Coalinga | Lewis, C. H. | 1 | 18, 21-15 | 1962 | Drilling |
| | Section Thirty Oil Co. | 7 | 30, 19-15 | 1206 | Pumping 20b/d |
| | Shell Oil Co. | 45-2 | 2, 20-15 | 3745 | Pumping 100b/d |
| Jacalitos Hills | Continental Oil Co., Kreyenhagen | 1 | 4, 22-16 | | Rigging up |
| Kingsburg | Erickson & Swanson | 2 | 22, 16-22 | 1175 | Drilling |
| Mendota | Jergins Oil Co., Cheney Ranch | 1 | 29, 14-13 | 9345 | Testing |
| | **Kern County** | | | | |
| Arvin | Morton, Lindley C., Jewett | 1 | 23, 31-29 | 6765 | Abandoned |
| Belridge—South | Santa Mora Oil Co. | 1 | 10, 28-20 | | Material |
| | Union Oil Co., Fitzgerald-Weston | 1 | 13, 29-21 | 7476 | Drilling |
| Buena Vista | Gen. Pet. Corp., B.V.A. | 1 | 1, 32-24 | 11886 | Abandoned |
| | Shell Oil Co., B.V.A. | 45-9 | 9, 32-25 | 12027 | Abandoned |
| Comanche Point | Oil Scout, Inc. | 1 | 27, 32-29 | 7008 | Abandoned |
| Devil's Den | Trigg, H. C. | 1 | 11, 25-18 | 500 | Redrilling |
| Edison | Goodrum & Vincent, Inc., S.P. | 5 | 31, 29-30 | 533 | Idle |
| Grapevine | Kern Line Oil Co. | 1 | 19, 11-19 | | Rig |
| | Richfield Oil Corp., Tejon Ranch | 1 | 2, 10-19 | 6520 | Drilling |
| Greeley—South | Superior Oil Co., Brandt | 1 | 28, 29-26 | 10200 | Drilling |
| McKittrick | Franco-Western Oil Co. | 19 | 8, 30-22 | 981 | Pumping 25b/d |
| | Hoyt, Otis, Union | 1 | 6, 30-22 | 2525 | Testing |
| Midway | Republic Pet. Corp., C.H. | 1 | 18, 32-23 | 2150 | Drilling |
| Richgrove | Bolling Oil Co., Quinn | 1 | 14, 25-27 | 2300 | Drilling |
| Semitropic | Gen. Pet. Corp., K.P.C. | 1 | 16, 26-22 | 6025 | Abandoned |
| | North Kern Oil Co., Sawyer | 1 | 16, 25-22 | 6620 | Idle |
| Shale Hills | Scotia Exploration Co., Abbott | 1 | 7, 27-19 | 2047 | Idle |
| | The Texas Co., McD-Theta | 1 | 12, 28-19 | 3560 | Drilling |
| Wheeler Ridge | Richfield Oil Corp. | KCL 2 | 28, 11-20 | 3900 | Drilling |
| | **Kings County** | | | | |
| Kettleman—South Dome | Bristol Oil Co., Smith | 1 | 35, 24-19 | 8054 | Idle |
| | **Tulare County** | | | | |
| Trico | Tidewater Assoc. Oil Co., Daniels | 35 | 22, 24-23 | 7660 | Drilling |

## Last B. V. Lake Test Formally Abandoned

Idle since March of this year, General Petroleum Corp.'s BVA No. 1, 11,886 ft. deep test in sec. 1,32-24, is at last permanently hung up. Drilled in the company of several such deep tests, the well found no showings worthy of consideration.

## Grapevine Test Out of Basalt

Richfield Oil Corp.'s Tejon Ranch No. 1 in sec. 2,10-19 of the Grapevine area, is drilling below 6520 ft. in hard sand after clearing a Basalt body running from 5625 to 6510 ft. According to field men this is the hardest digging formation ever found in San Joaquin Valley operations.

North of this play, near the center of sec. 19,11-19, Kern Line Oil Co. has erected rig for a well on properties selected by the application of a new electric determining machine. It is understood that actual drilling is to start in the near future.

## Wheeler Ridge Try Again Making Hole

Delayed by a drill pipe fish, Richfield Oil Corp.'s deep test on top the Wheeler Ridge is drilling below 3900 ft. This well is south of the small field and of the first deep try which the company carried to promising sands in the Oligocene at 11,168 ft. only to have production attempts ruined by water entry. The current try is thought to be higher structurally and consequently affording opportunities for water-free production from the hitherto unproduced zone.

## Hoyt Completing McKittrick Well

Otis Hoyt is completing Union No. 1 near the southeast corner of sec. 6,30-22 on an 80-acre sub-lease from Union Oil Co. Bottomed at 2523 ft. in oil sand topped at 2354 ft., the well cemented 8⅝-in. water string at 2350 ft.

Shallower completions recently effected in the area at Franco-Western's No. 19 which was completed for 60 bbls. of heavy oil from 960 ft. and Freda G. Oil Corp.'s Laymance No. 3 which made 70 bbls. of clean 16 gravity oil from 1245 ft.

## Richgrove Test In Gray Vedder

Bolling Oil Co.'s Quinn No. 1, latest test of the Richgrove area and located in sec. 14,25-27, is reported to have topped the Vedder at 2155 ft. and is presently drilling at 2293 ft. in gray sand showing a few streaks of poor oil sand.

## Kern Valley Seeks New Edison Field

An attempt to develop a southeastern extension of the Edison area will be made by the Kern Valley Drilling Co. which is planning to drill a well in the northeast corner of sec. 30,30-30. about a mile and one-quarter from the productive limits.

Location is said to be south of the main northwest-southeast fault and east of the established north and south fault. Unusual faulting in the area is claimed by the company to indicate a trap for the accumulation of oil and gas.

Several prospect holes have been drilled in the vicinity of the new venture, one of which, drilled some years ago by Carvell Petroleum Co., was reported to have shown some oil.

First objective of the company is the Kern River series, extending approximately from 800 to 1200 feet in this locality. A test for commercial production is also planned in the Temblor formation below 1700 ft.

## Cole's Levee Tops San Joaquin Activity

With Richfield Oil Corp. running 15 strings and having two rigs ready for tools; Ohio Oil Co. digging two and readying one project; and with Standard Oil Co. drilling one while Union Oil Co. has graded for a well, Cole's Levee is the San Joaquin Valley's busiest field.

With most of the drilling projects near 8500 ft. in depth, it appears that the field is due for an avalanche of completions.

## Honolulu Spuds B. V. Hills Try

Situated high on structure in sec. 10, 32-24, Honolulu Oil Corp. has spudded No. 25-P in a proposed test of deep sands believed to be present under the hills. Since the well is apparently advantageously located it is probable that it will have an excellent chance at finding lower Miocene and Eocene sands high enough to be productive.

## Tide Water Gets Shallow Producer

Another corehole discovery seems to have been accomplished by recent developments in Tide Water Associated Oil Co.'s corehole, West Slope No. 1. Located in the Pyramid Hills district in sec. 20,24-18, the well was drilled to 2087 ft. and plugged back for tests at 950 ft. With 6⅝-in. pipe cemented at 835 ft., 5-in. liner including 104 ft. perforated was landed at 949 ft. from which point the well pumped a 40-bbl. rate of 16 gravity oil cutting 3.0%. At last report the well had sanded up and was being cleaned out.

With the advent of pre-packed gravel liners, such conditions are readily controlled and it appears that Tide Water has a shallow field marked up. The company is preparing to deepen an earlier corehole, Pyramid Fee No. 1, in sec. 18,24-18 in an effort to delineate the size of the strike.

## Superior Completes Greeley Merrill No. 1

Superior Oil Co. completed its second well in the Greeley extension when Merrill No. 1 was turned to the tanks flow-

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ing 1320 bbls. of clean 36 gravity oil through a 20/64-in. bean. The oil flow, under 1500 lbs. pressure, was accompanied by 950,000 cu. ft. of gas. The company is rigging up Moore No. 1 in the southeast corner of sec. 12,29-25.

General Petroleum Corp. completed Oughton No. 1 for an estimated 1200 bbls. and is drilling Wallace No. 1 at 4000 ft. in sec. 1,29-25.

In sec. 7,29-26 Standard Oil Co.'s KCL No. 12-9 is below 9485 ft. while No. 12-10 was last reported at 7508 ft. Standard's KCL No. 11-22, in sec. 18,29-26, is drilling in brown shale at 10,205 ft. and derrick is being skidded in for No 11-24.


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## Hall-Baker "Cat" Finds Vedder Gray

Moving northwest of the Domion Pool of the Mount Poso field, Hall-Baker Co. drilled Villiard No. 1 to a barren 1967 ft. in sec. 18,26-28. Top of the objective Vedder zone was 1876 ft.

## Midway Outpost Cores Oil Sands

With derrick built over a 1576 ft. corehole in the hills a mile due west of the city of Taft, Republic Petroleum Corp. has cored oil sand from 1838 to 1900 ft. Interest in the well was stimulated when during the corehole operation 90 ft. of good looking tar sand was taken from 750 to 970 ft.

Located in sec. 18,32-23, the well appears to have excellent prospects of discovering valuable shallow production, and bottom has been plugged from 2457 ft. to 1888 ft. for a test. Casing will be cemented at 1750 ft.

Lincoln Petroleum, Valley Oil and C.C. M.O. hold acreage adjacent to the Republic lease.

## Trico Deep Test Below 7500 Ft.

Tide Water Associated Oil Co.'s Daniels No. 35, deep oil test in sec. 22,24-23 of the Trico area, is drilling at 7515 ft. It is believed that the well encountered the brown shale marker near 7400 ft. although geologic information concerning the try is scant.

In the Trico gas field, Standard Oil Co. completed and shut in Rideout No. 1 for a routine gas completion. In sec. 21,24-23 Trico Oil & Gas Co. is building rig for Newland No. 3.

## South Greeley Well Passes 10,000 Ft. Level

Superior Oil Co.'s Brandt No. 1. wildcat attempting to find production southeast of Greeley field limits in sec. 28,29-26, is drilling in hard shale at 10,276 ft. Formation tests of the first encountered sand at 7450 ft. recovered salt water and mud. It is believed the sands tested approximated the Greeley sands, productive in the field. An equivalent of deep Greeley sands should not be expected short of 11,500 ft. at this point.

## Gen. Pet. Will Drill Twisselman Properties

Entering the Shale Hills area activity, General Petroleum Corp. is grading location for Twisselman No. 1 on the southerly tip of the Ranch of that name. The projected try will be in the southeast corner of sec. 31,27-19.

While the Shale Hills district has been much drilled, this particular section has never before been tested. Nearest exploratory work is from three to five miles from G. P.'s try.

Five miles southeast of the Twisselman well, in sec. 12,28-19, The Texas Co., long active in Shale Hills exploration, is drilling McDonald-Theta No. 1 at 3560 ft.

## Strand Well Makes 2560 Bbl. Potential

Shell Oil Co.'s KCL No. B-86-12, located in sec. 12,30-25 established an open flow potential of 2560 bbls. of clean 33.3 gravity oil with 1,695,000 cu. ft. of gas.

## Shell Active in Ten Section Field

After completing A-38-20 for 950 bbls. and B-38-21 for 758 bbls., Shell Oil Co. yet has 9 drilling projects in Ten Section. Located in the south San Joaquin Valley on lands owned by the Kern County Land Co., the field is operated exclusively by Shell.

Discovered in the summer of 1936 by a well called Stevens No. 1, Ten Section was the first deep oil field discovered on the floor of the San Joaquin Valley. Subsequent discoveries in the area, which produced from the same prolific sands discovered by Shell, prompted adoption of the name "Stevens Sand" for the zone.

Currently drilling in this field are KCL Nos. A-8-19, A-87-29, A-21-30 and A-61-30. Location has been made for the immediate drilling of KCL Nos. A-8-20, A-21-29, A-2-30, A-41-30, and A-81-30.

## Two Wells Drill For Wasco Vedder

Wasco field, site of the deepest drilled hole in the world, Continental Oil Co.'s 15,004 ft. producer KCL No. A-2, is to be enriched by two wells. Pacific Western Oil Co.'s Meyer No. 1 now drilling at 8817 ft., and Standard Oil Co.'s Mushrush No. 5 last reported at 8890 ft.

Daily average supply of domestic crude oil estimated by the Bureau of Mines to meet the market demand in May 1940 is 3,601,000 barrels. This is 51,000 barrels, 1½ per cent, more than the estimated demand for April and is almost the same as the actual demand for May 1939.

Domestic market retail sales of new passenger cars and trucks in March 1940 totaled 398,013 units, according to preliminary figures of the Automobile Manufacturers Association. This is a gain of 20 per cent over March 1939 and 40.3 per cent over February 1940.

# Los Angeles Basin

## Wildcats Continue In Basin Limelight

Still in the center of the limelight is British American Oil Producing Co.'s Edwina No. 1 in sec. 11,3-16 near Newhall. Deepened from 4725 ft. where an unsuccessful production test was made, the well at 5425 ft. was said to have entered a 75-ft. body of oil sand whose porosity and permeability tests were more than satisfactory. A production test seems to be in the offing at present depth of 5904 ft.

Just east of Barnsdall Oil Co.'s productive Rancho San Francisco property, Newhall-Potrero Oil Co.'s Ferguson No. 1 is being rigged up by drilling contractor J. E. Mabee. The well seeks production in the Modelo horizons being produced by Barnsdall.

Two projects are active in the Castaic area; the most important being R. E. Havenstrite Operator's test of the Del Valle Anticline in sec. 16,4-17 where the drill is now down 1500 ft. A mile and a half to the northwest, R. T. Colter is cleaning out the old Royal Land Corp. Ramona No. 1 with the intention of deepening to 2600 ft. Several oil showings were reported before suspension of drilling at 1330 ft.

About a mile west of Dominguez, Wood-Mellon Oil Co. is drilling below 5300 ft. in its try to find a new field near the corner of Victoria and Figueroa.

East of the old Whittier field, Union Oil Co. is attempting to find new production with Sansinena No. 12, located in sec. 31,2-10, and now below 4750 ft.

Three miles southeast of the Union well, Security Land & Water Co. is preparing to drill Security No. 1 in the southeast quarter of sec. 9,3-10.

Two wells are working in the San Fernando Valley. Casa Grande Oil Co. is deepening its Lopez-Lundy No. 1 and Geo. Parry is drilling his Moynier-Parry No. 1 at 2300 ft. South Oil Co. is said to be planning a third well for the area.

Having overcome troublesome delays, Cal-Pico Oil Co. is planning to start at once on its Beach No. 1 on Durfee Road north of Beverly Blvd.

Lindley C. Morton is preparing to spud what promises to be an important test well in 23,4-10 southeast of Anaheim. The well will seek commercial production in sands which were found by Shell Oil Co. to be poorly saturated a mile to the northwest.

Finding nothing of an encouraging nature to 9310 ft., Union Oil Co. abandoned its Schimming No. 1 in sec. 25, 4-11 near Stanton. A mile and a half southeast, Bird & Chambers are building a steel derrick after the old wood rig was damaged while trying to loosen drill pipe stuck on bottom at 1250 ft.

Harrison M. Tucker, insurance broker-oil man, is drilling his west Buena Park wildcat venture at 8000 ft. with no showings of importance yet reported.

Wilshire Oil Co. is considering re-entering the abandoned Hogan well at West Coyote.

## El Rey Wildcat Makes Small Well

Unable to maintain a steady flow on gas lift, El Rey Oil Co.'s wildcat at the northwest corner of Western Avenue and Imperial Highway has now attained the distinction of being one of the world's deepest pumpers. Bottomed at 9063 ft., and plugged to 9000 ft., the well makes about 100 bbls. a day from the 368 ft. open below the shoe of the 7-in. water string which is cemented at 8632 ft. Production has been intermittent because the operator is experimenting with the pump at various levels both with and without a tubing packer in order to find out the most efficient combination.

Though production is disappointingly small, quality of the oil is good, being slightly over 32 gravity and very nearly free of water. The limited recovery rate is due to lack of porosity and permeability of the sands which are similar stratigraphically to the recently developed horizons of Dominguez and Rosecrans.

Hardly a commercial producer itself, El Rey Oil Co.'s Westmore No. 1 may yet be classed as the discoverer of a new field as Miocene sand characteristics may change radically within very short horizontal distances. This fact is strikingly illustrated in the southern section of Rosecrans where porosity and permeability seem almost to vary from well to well. Those who are optimistically inclined believe it possible that further drilling in the El Rey area will result in the completion of larger wells, especially if the original well is found to be off the structural high as many geologists contend it is.

## North Inglewood Well Scheduled to Redrill

Federal Oil Co.'s Smith No. 1 at the northerly limit of Inglewood field production is scheduled for plugging and a directional redrill job according to latest advices. Carried to 6700 ft., the hole encountered faulted conditions and failed to find the Miocene which normally should have been topped above 6000 ft.

**LOS ANGELES BASIN WILDCATS**

| Area | Well | No. | Section | Depth | Status |
|---|---|---|---|---|---|
| Athens | El Rey Oil Co., Westmore | 1 | 2, 3-14 | 9063 | Pumping |
| | Melrose Pet. Co. | 1 | 12, 3-14 | | Rig |
| Castaic | Colter, R. T., Explor. | 1 | 8, 4-17 | 1338 | Prep. to deepen |
| | Havenstrite, R. E., Lincoln | 1 | 16, 4-17 | 1255 | Drilling |
| Dominguez, West | Wood-Mellon Oil Co., Wood | 1 | 31, 3-13 | 5225 | Drilling |
| Inglewood | Vanguard Oil Co., L.A.I. | 1 | 29, 2-14 | 1041 | Idle |
| La Habra | Security Land & Water Co. | 1 | 9, 3-10 | | Rigging up |
| | Union Oil Co., Sansinena | 12 | 31, 2-10 | 4350 | Drilling |
| Mint Canyon | Redwood Oil Co., Mitchell | 2 | 22, 4-15 | 775 | Drilling |
| Newhall | British-American Oil Prod. Co., Edwina | 1 | 14, 3-16 | 5820 | Drilling |
| | Canyon Oil Co., Sanborn | 1 | 6, 3-16 | | Rig |
| | Consolidated Pet. Co., Needham | 4 | 13, 3-16 | 4398 | Idle |
| | Creighton Hammon Synd., C.H. | 1 | 17, 3-16 | 520 | Drilling |
| Palos Verdes | Rolling Hills Pet. | 1 | 27, 4-14 | 6580 | Idle |
| San Fernando | Parry, Geo. G., Moynier-Parry | 1 | 6, 2-14 | 2100 | Drilling |
| Sunland | Casa Grande Oil Co., Lopez-Lundy | 1 | 1, 2-15 | 2540 | Drilling |
| West Whittier | Cal. Pico Oil Co., Beach | 1 | 7, 2-11 | | Foundation |
| | **Orange County** | | | | |
| Anaheim | Morton, Lindley C., Thomas | 1 | 23, 4-10 | | Rigging up |
| Buena Park | Tucker, H. M., Heath | 1 | 34, 3-11 | 8100 | Drilling |
| Costa Mesa | Thompson, Milton N., Banning | 1 | 9, 6-10 | 5625 | Idle |
| Garden Grove | Bird & Chambers | 1 | 31, 4-10 | 1250 | New rig |
| Stanton | United Oil Co., Schimming | 1 | 25, 4-11 | 9310 | Abandoned |
| Westminster | Plainview Oil Co., Hill | 1 | 12, 5-11 | | Foundation |

**NORTHERN COUNTIES WILDCATS**

| County | Well | No. | Section | Depth | Status |
|---|---|---|---|---|---|
| Monterey | Loma Grande Oil Co., Corey | 1 | 23, 24s-10e | 150 | Drilling |
| | Priest Valley Pet. Co., Greve | 1 | 22, 20s-12e | 2730 | Drilling |
| San Mateo | Ra-Life Petroleum, Inc., Bell | 5 | 16, 7s-4w | | Rigging up |

With chances in no way injured by developments in the Federal well, R. R. Bush Co.'s Sentous No. 1 is drilling below 5400 ft. on the westerly flank of the old producing area. Should the Miocene axis be displaced westerly as is partially indicated by the Smith well, the Bush project stands an excellent chance of becoming a producer.

## Dominguez Outpost Attempts Completion

After plugging off the bottom few feet which looked wet, Gibraltar Drilling Corp. is preparing to make a production test in its southwest Dominguez outpost well. Located at the southwest corner of Avalon Blvd. and Victoria Ave., hole was bottomed at 8209 ft. and plugged to approximately 8200 ft. for the trial of the Eighth Callender zone, the top of which is just below the 7-in. casing shoe at 7972 ft. Engineers for the company predict a small producer.

Union Oil Co. obtained another good west end producer in Austin No. 2 which came in at 1200 bbls. a day from perforations open in the Seventh Callender from 6973 to 7123 ft. and in the Eighth Callender from 7423 to 7468 ft. Two weeks previously the company's Austin No. 1 initialled over 1200 bbls. on a short gauge.

In the central portion of the field, Shell Oil Co. finished Reyes No. 104 with a potential of 850 bbls. a day with perforations open at intervals from 6850 ft. to 7535 ft.

Far beyond present producing limits, a new company is said to be planning to drill at the southeast corner of Victoria Ave. and Main St.

## Deep Hill Well Flows By Gas Lift

Allied Petroleum Corp.'s No. 34 was decidedly no help to the long awaited Signal Hill deep drilling boom. Bottomed at 10,636 ft. and with liner perforations open below the water string at 9723 ft., the well is producing an estimated 200 bbls. a day on gas lift after trying several other methods of artificial flowing. Unlike the two preceding deep wells, there is some water in the product, the cut sometimes running as high as 25%.

Shallow zone activity at Long Beach continues brisk with completions usually under 100 bbls. A notable exception is R. B. Mitchell's No. 1 at the southeast corner of 32nd St. and Elm Ave. which found only 40 bbls. a day in the Yunker zone and so perforated in the Brown to obtain 110 bbls. cutting 15.0%. Other operators in the area are considering similar moves.

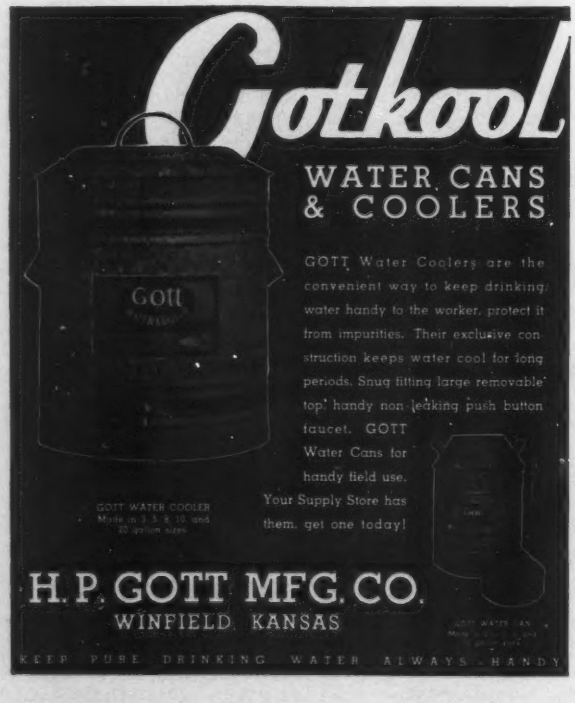
## St. Anthony Gordon 3 Rosecrans' Biggest Well

St. Anthony Oil Corp. Gordon No. 3 is the largest well yet completed in the southerly extension of Rosecrans. With 7-in. casing cemented at 7314 ft. and a perforated liner landed on redrilled bottom at 7740 ft., the well was swabbed in with initial estimates running as high as 2500 bbls. a day. Located north of Compton Blvd. and west of Main St., Gordon No. 3 proves up a large area south and west of former field limits.

Across Main St. to the east, Southern California Petroleum Corp. deepened Rowena No. 1 to the Slabaugh zone at 7734 ft. and recompleted flowing 600 bbls. per day according to President Robert Schlauderman.

While developments on the west have been very favorable, those on the east have been somewhat doubtful. At the intersection of Compton Blvd. and San Pedro St., Mission Oil Co. and Chicago Oil Co. each have found the oil sands less saturated than hoped for but are carrying on in search of the Darling zone which at this location should be good.

In the Athens sector, Thorley Oil Co. is drilling below 7300 ft. after coring what is described as good oil sand from 6000 to 6175 ft. Inca Oil's redrilling job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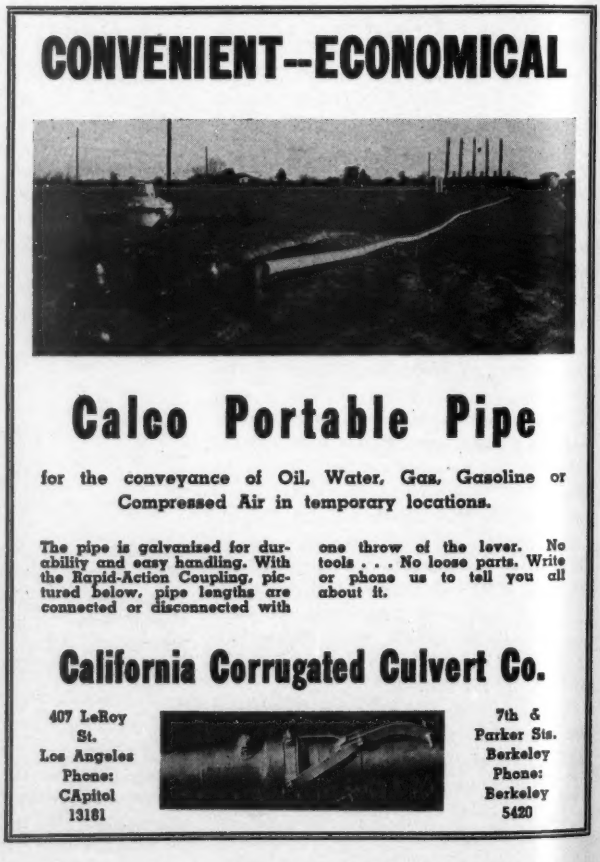
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was suspended at 5500 ft. while M.G.M. filmed scenes for its Texas oil picture "Boom Town."

## Nine New Wells "In" In Wilmington Field

The completion rate at Wilmington continues the highest in California with nine new wells placed on production since our last tabulation. Besides these, five old holes were returned to production after being redrilled.

No remarkable flow rates were established by either group, the highest being that of Union Pacific Railroad's No. 140 which did 855 bbls. from the Ford zone. The well is located in the highest part of the field; hence the high yield for this horizon.

Second in point of output was Continental Corp.'s Flood Control No. 6, a Ranger well, which flowed 640 bbls.

No Terminal zone well exceeded 350 bbls.

It is probably the first period since the development of the field that Ford and Ranger zone completions topped the Terminal zones in initial output.

One of the most interesting wells was Simon Bernstein's second northeasterly outpost at the corner of 11th St. and Caspian Ave. With 310 ft. open in the Ranger zone to bottom at 3520 ft., the well came in flowing 175 bbls. a day. It is expected to stimulate interest in the area.

## West Montebello Activity Dropping

At nearly the lowest ebb in its two and one-half year history is activity in the West Montebello field. Only two new wells are drilling: Chemical Oil Co.'s Chemi-Culture No. 1, now fishing at 6500 ft., and Kern Oil Co.'s Monterey No. 42.

Several good yields have been obtained by deepening old wells to the 8-3 zone at 7800 ft. with the most notable examples being the 400 bbls. being claimed for Brookline-La Merced Drilling Co. Drake No. 1 and the 600 bbl. production test of Kern Oil Co.'s Monterey No. 25.

Kern's Eggleston No. 3, a new well, was finished with an initial flow of 750 bbls. while smaller rates were registered by Montebello Oil Co.'s Wallace-Farish No. 1 and The Texas Co.'s Wilcox No. 4. The latter two wells are in the westerly section of the field.

Deepened to the new zone, Montebello Reservoir Oil Co. No. 1 was recompleted with initial estimates of production placed at 335 bbls. of oil and 1,900,000 cu. ft. of gas.

## Drilling Boom Looms For East Coyote Field

On the verge of a drilling boom is the central portion of the East Coyote field where two months ago Geo. Terry's Master Petroleum Co. recompleted Lemke No. 1 at 4242 ft. pumping 400 bbls. a day. All that is now needed is the completion of one of the two wells now drilling for a respectable yield to demonstrate that the Master well is no flash in the pan. As there are several old producing zones in this part of the field, it may be some time before any material extension is attempted, Fred Garliepp having set casing over the 3100 ft. zone and Hathaway Co. not having yet cored through it.

Next producer in the Master zone should be that company's Mathis No. 1 which is preparing to test after deepening to approximately 4200 ft.

On the Wallop property, drilled years ago by General Petroleum Corp., Bryan-Pacific Oil Co. has derrick up for a new well.

## Republic Spuds Hollister Well

Republic Petroleum Co. is spudding its interesting test of a virgin structure on the large Hollister ranch on the coast of Santa Barbara county. Located east of the group of wells which found non-commercial quantities of high pressure gas in the Vaqueros at 3000 ft., the new project is being drilled primarily in search of petroleum. The rig is situated in the east half of projected sec. 36,5-33.

## Turf Oil Tests Turf Club Well

Turf Oil Co., operating affiliate of the Hollywood Turf Club, is making a production test in its initial attempt to include the Inglewood race track in the Potrero oil field.

Located south of the good producers of Basin Oil Co., the well was plugged from 8446 ft. to 8390 ft. where a liner containing 183 ft. of perforations was landed and cemented at 8200 ft. Tubing was hung at 7500 ft. and the well swabbed in flowing an estimated 500,000 cu. ft. of gas and considerable quantities of 50° gravity condensate. No water appeared in the first gauges.

## Wilmington Wildcat Nears Critical Stage

Nearing the critical stage is Superior Oil Co.'s "B" No. 1, wildcat well in the Morman Island area of Wilmington. When last reported bottom was 3110 ft. but, characteristically, the company was reticent regarding formations encountered.

## Barnsdall Completes Small Frisco Well

Barnsdall Oil Co. obtained only a small producer in Rancho San Francisco No. 9 which was recently completed in the Newhall-Potrero field. Only the Third zone was taken in this well, a liner containing 170 ft. of perforations being landed on bottom at 7193 and cemented through perforations at 6993 ft. Unable to flow naturally, the well was finished for 60 bbls. a day on gas lift.

Continuing with its development program, the company is drilling R.S.F. No. 12 below 3000 ft.

## Hugh R. Lamberth Heads Fluor Division

H. R. Lamberth

Announcement is made of the recent appointment of Hugh R. Lamberth as manager of the Cooling Tower Division of The Fluor Corp. Ltd. His new duties will include responsibility for cooling tower design, manufacturing and sales. Mr. Lamberth comes to The Fluor Corp. with an enviable record of engineering experience which has been almost entirely devoted to plant process problems, involving heat application, recovery and dissipation in the oil, gas and allied industries.

A native of Dallas, Texas, Mr. Lamberth is a graduate of the U. S. Naval Academy at Annapolis, but resigned from the Navy after a 3-year tour of duty. Since that time he was associated with a number of nationally known firms, and came to the Fluor organization from the Southern California Gas Co., where he was engaged in industrial engineering. Mr. Lamberth's headquarters will be at Fluor's Los Angeles office.

"Oil Fires, Their Prevention and Extinguishment", is the title of a sound motion picture prepared by the California Oil and Gas Association's Fire Protection Committee and now available for showing by members.

Culminating meetings held by the various A. P. I. California subcommittees on standardization of oil field equipment, the Main Standardization Committee of the California Oil and Gas Association held a meeting on April 19.

You are reading the Pacific Coast oil men's home paper.

# Coastal District

## Huasna Formations Slow Up Superior

Superior Oil Co. is finding the "going" tough at Huasna. Spudding on May 14 Superior has made only 2000 ft.

The Monterey Shales appear to be at their hardest in this portion of San Luis Obispo county and while Superior's progress is slow when compared to drilling rates in other fields, this well none-the-less sets a speed record for the Huasna Valley. Last previous try in the area was Hancock Oil Co.'s Scherer-Dickes No. 1 which required seven weeks to reach 2150 ft. Other wells took a matter of years to attain 4000 ft.

## Sumerland Well Fishes Drill Pipe

Oil Group, Inc. Hyland No. 1, exploratory well located on the hill back of Summerland, is circulating oil to loosen stuck drill pipe. Depth at the time of the mishap was 2925 ft. with the formation reported as Sespe.

## Petrol Corp. Tries Gato Ridge Extension

Important to the future of the Gato Ridge field is Tognazzini No. 3-15, now being drilled by The Petrol Corp. Located on the southeasterly plunge of the huge anticline, the well, if successful, will extend production nearly a mile. Though detailed reports are lacking, it is admitted that partings in the brown shale have shown considerable oil and that production at present depth of 2900 ft. is not an impossibility.

No. 3-15 is located near the center of projected sec. 15,8-32.

## Tide Water Returns To Santa Rita Hills

After nearly three years, Tide Water Associated Oil Co. is re-entering the Santa Rita Hills area of Santa Barbara county with a new wildcat, Souza No. 1. The new project will be in section 12, 6-33, about two miles southeasterly from Leonis No. 1 which the company abandoned in November of 1937 after coring a rather unusual section of sedimentary deposits to 1375 ft., volcanics from that depth to 1500 ft., and brown shale to 3400 ft. From 3400 ft. to bottom at 4950 ft. formations were badly broken, the drill encountering at various levels Serpentine, Conglomerate and Brown Shale.

## San Mateo County Gets New Driller

Ra-Lite Petroleum, Inc. is rigging up cable tools to drill a 1200-ft. well, Bell No. 5, in the La Honda field in sec. 16, 7-4, San Mateo county. The company now has two wells producing and is reconditioning a third.

## Shiells Canyon Well Tops Producing Zone

With the producing zone topped at 2950 ft., El Rancho Oil Co.'s Elkins No. 4 is standing cemented preparatory to drilling-in and completing.

The Texas Co.'s latest completion, Shiells No. 139, is pumping 30 bbls. a day of 34 gravity clean oil.

## Cole's Giacomini Wet: Union Starts Le Roy 5

Still harassed by water trouble is Fred E. Cole's Giacomini No. 1 in the Santa Maria Valley field. With bottom at 4608 ft. and schist and casing cemented at 4640 ft. over the top of the Monterey Chert, a pump test yielded only muddy water with a little heavy oil. The water string will probably be recemented for the fourth time.

California Lands. Inc., has temporarily abandoned plans to drill MacDonnell No. 2.

In the westerly portion of the Valley, Union Oil Co. has derrick up for Le Roy No. 5 which will be drilled immediately.

Near Betteravia, Union's wildcat, Pezzoni No. 2 is being rigged up.

## Merchants To Test Well in Sespe

Merchants Petroleum Co. is reported to be planning a production test for Cochrane No. 8 which it recently deepened to 2300 ft. Formerly a small pumper at 1900 ft., the well has shown increasing quantities of oil since the cable tool deepening job was started. If production is not satisfactory at this depth, it is planned to carry the hole through the Sespe to test Eocene possibilities.

In the Hopper Canyon area of Ventura county, J. A. English is drilling his Lankershim No. 3 and G. E. Development Co. is still working on No. 7. Both seek the 125 bbl. production found in English's last completion.

Several independent operators are completing plans to drill in scattered areas throughout Ventura county and the next month should see at least two or three under way.

## Avenue Outpost Standing Cemented

British American Oil Producing Co. has cemented 8⅝-in. casing at 8300 ft. in its Ventura Avenue northside outpost well, Barnard No. 1 preparatory to coring farther into the oil zone below present bottom at 8400 ft. The company's other driller, Hartman No. 10, is drilling in sandy shale below 7200 ft.

California Alliance's Schmidt No. 1, another northerly project, is below 8700 ft.

Major company activity is nearly equally divided between Shell and Tide Water Associated Oil, the former company having six wells under way and the latter having seven.

Largest recent completion was Shell's Taylor No. 118 which initialled 3650 bbls. per day from 7700 ft. Second in point of yield was Taylor No. 116 which established a potential of 2660 bbls. while Tide Water Associated's Lloyd No. 119 netted nearly 500 bbls. despite a very heavy cut.

### COASTAL COUNTIES WILDCATS

| Area | Well | No. | Section | Depth | Status |
|---|---|---|---|---|---|
| **Santa Barbara County** | | | | | |
| Betteravia | Union Oil Co., Pezzoni | 2 | 33, 10-35 | | Grading |
| Gaviota | Republic Pet. Co., Hollister | 1 | 36, 5-33 | | Rig |
| Santa Rita Hills | Tidewater Assoc. Oil Co., Souza | 1 | 12, 6-33 | | Location |
| Summerland | Oil Group, Inc., Hyland | 1 | 16, 4-26 | 2920 | Fishing |
| **San Luis Obispo County** | | | | | |
| Arroyo Grande | California Fuel Oil Co., Elberta | 3 | 5, 32-13 | 2825 | Drilling |
| Elkhorn | Calif. Pet. Prod., Irons | 1 | 19, 10-24 | 2527 | Testing |
| Huasna | Superior Oil Co., Tar Springs | 1 | 24, 32-14 | 2100 | Drilling |
| **Ventura County** | | | | | |
| Conejo | Sulphur Springs Oil Co., Janss | 1 | 33, 2-19 | 3175 | Drilling |
| Santa Susana | K. C. Oil Co., Marr | 1 | 32, 3-17 | 1715 | Idle |
| Sespe | English, J. A., Lankershim | 3 | 13, 4-9 | 150 | Drilling |
| | G. E. Development Co. | 7 | 13, 4-19 | 875 | Drilling |
| | Merchants Pet. Co., Cochrane | 8 | 1, 4-20 | 2300 | Drilling |
| | Rio Hondo Oil Co., Cosby | 1 | 14, 4-19 | 1375 | Drilling |

## Lloyd Corp. Drills Ventura Core-Hole

Seeking geological information on the north flank of the extreme easterly plunge of the Ventura Ave. structure, Lloyd Corp. is drilling a core hole known as No. 1-A. The well is on Sexton property and adjoints an old hole drilled to 5500 ft. by Associated Oil Co. and another carried to 7100 ft. by Milham Exploration Co.

## Loma Grande Oil Co. Spuds Monterey Well

After one false start, Loma Grande Oil Co. is again reported to have spudded-in its wildcat, Corey No. 1, in Monterey county. Located near Bradley in sec. 23,24-10, the depth is said to be yet under 600 ft.

## Elberta No. 3 Cores Few Oil Showings

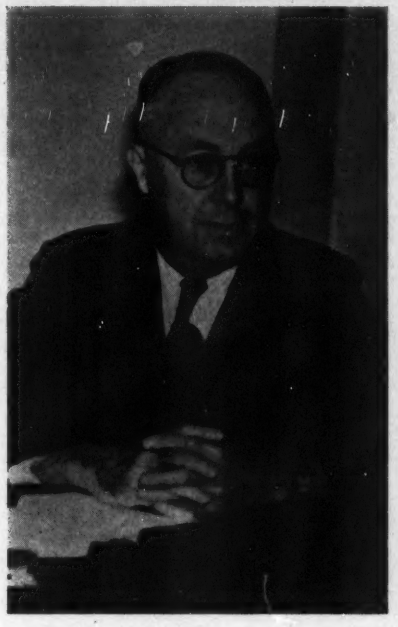
Only a few oil showings have been so far cored in Elberta No. 3 of California Fuel Oil Co. near Edna in San Luis Obispo county. At 2200 ft. brown shale carried some heavy oil but a sand at 2350 ft. was barren. Hard, silty brown shale entered at 2650 ft. again contained a small amount of oil but though it continued to 2850 ft., did not appear to be commercial.

## Leslie and Whatley In Derrick Business

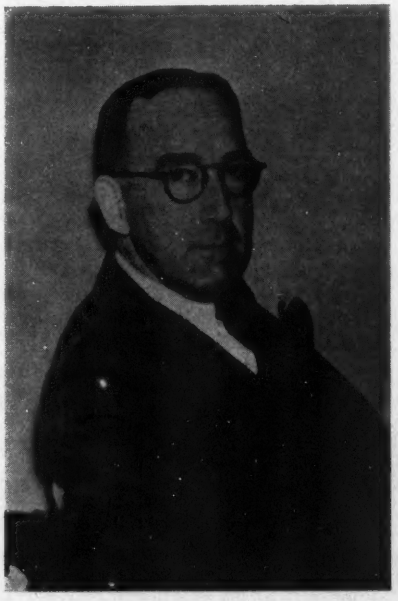
With the experience of two such veterans as George Leslie and Art Whatley as its mainstay, Derrick & Equipment Co., 608 Subway Terminal Bldg., Los Angeles, should prosper in its recently entered field of supplying drillers with new and used derricks, and in providing all kinds of lease construction work such as roads, sumps, foundations, derrick erection and dismantling, pipe racks, rigging up, derrick skidding. The new company accepts complete turnkey derrick jobs, whether they furnish the derrick or just move one belonging to the customer.

George Leslie first became known to oil men through his association with the Oil Bulletin in 1924, where he was successively space salesman and advertising manager until the end of 1931. Mr. Leslie went to Martin-Decker in 1932 as office manager, and remained there until the middle of 1936. For a year he served with Geoanalyzer Corp. as a salesman, and then joined Steel Oil Derrick Co. as sales manager. He resigned from the derrick company to form Derrick & Equipment Co. "The Nineteeners" of the oil industry know Mr. Leslie as an early member of that group.

Art Whatley got his start in the oil business in 1922 in the engineering department of the Union Tool Co., at Torrance, under the late Eddie Goeser, and remained there three years. From there he went to work for the Emsco Derrick & Equipment Co., as field engineer in the derrick division. He continued this connection for five years and was transferred to the sales department until 1934 when Macco Construction Co. took over the sales of Emsco derricks. Mr. Whatley went with Macco where he remained for more than five years. During the past year he has been with Emsco Derrick & Equipment Co. in the sales department.



George Leslie



Art Whatley

## Louis Chappuis Sails For Peru

Scheduled to sail June 19, Louis C. Chappuis, well known geologist, will spend the next four to six months mapping a large area in southern Peru.

Louis C. Chappuis

Mr. Chappuis was employed by the Peruvian interests because of his wide range of experience in both the North and South American continents.

## Extensible Gauge Strips By J. A. Campbell Co.

A new type of gauge strip which can be added to, foot by foot, to fit any height, for gasoline, oil and water tanks, has been developed by J. A. Campbell Co., Long Beach, Calif. The strips are in units of one foot each, locked together by foot numeral inserts. The numerals are clearly visible at a distance. These strips are cast from a zinc base alloy in chrome-molybdenum-steel dies under pressure. Each strip is 2x12x⅛ inch thick, and is resistant to all weather conditions. Numerals and graduations are raised. Two finishes are available, molybdenum and chromium. The strips can be mounted on a wooden board or metal, fastened to the tank, alongside the gauge glasses. Further details may be obtained from the manufacturer, 645 E. Wardlow Road, Long Beach, Calif.

You are reading the Pacific Coast oil men's home paper.

## Lester G. Metcalf Is Taken By Death

Word of the sudden passing of Lester George Metcalf, manager of marine operations for Union Oil Company, came as a distinct shock to his many business associates and acquaintances in Pacific

L. G. Metcalf

Coast oil and shipping circles. Totally unexpected, Mr. Metcalf's death was caused by a heart attack in the early morning of June 6th.

"Met" first became associated with Union Oil Company in 1914 as an engineer in the pipe line division. In 1920, after serving eighteen months as a captain in the United States army, he became superintendent of the company's Oleum Refinery. Six years later he was transferred to Los Angeles, assuming the duties and responsibilities as assistant manager of refineries. He became manager of refineries in 1930. Prior to his appointment last year as manager of marine operations, he served as manager of manufacturing. During the past year he ably directed the company's tanker fleet replacement program.

## A.P.I. Pacific Coast Advisory Committee

Officers and members of the advisory committees for the Pacific Coast district of the American Petroleum Institute's Division of Production for the 1940-41 period, elected at the recent spring meeting have been announced by C. A. Young, secretary of the division. R. N. McMaster, Chanslor-Canfield Midway Oil Co., Los Angeles, was named chairman of the Pacific Coast district. Other district officers and members of the advisory committee follow:

E. L. Davis, The Texas Co., Los Angeles, vice-chairman; R. B. Hodgson, Tide Water Associated Oil Co., Ventura, Calif., vice-chairman; D. T. Hoenshell, Kettleman North Dome Assn., Avenal, Calif., vice-chairman; W. G. Coroy, Pacific Gear and Tool Works, Los Angeles, treasurer; D. S. Kilgour, California Oil & Gas Assn., Los Angeles, secretary. **Advisory Committee:** H. C. Pyle Union Oil Co. of California, Los Angeles, chairman; L. L. Aubert, Bankline Oil Co., Los Angeles; Bruce Barkis, B & W Inc., Long Beach, Calif.; A. H. Bell, Continental Oil Co., Los Angeles; E. C. Bolton, The Ohio Oil Co., Los Angeles; L. A. Cranson, Honolulu Oil Corp., San Francisco; J. F. Dodge, University of Southern California, Los Angeles; E. G. Gaylord, Standard Oil Co. of California, San Francisco; H. P. Grimm, Mid-Coast Oil Co., Los Angeles; E. B. Hall, Hall-Baker Co., Los Angeles.

Also, W. L. Heater, Baroid Sales Dept., Los Angeles; Joseph Jensen, Tide Water Associated Oil Co., Los Angeles; Wm. Keck, Jr., Superior Oil Co., Los Angeles; R. L. Keyes, The Texas Co., Los Angeles, W. N. Lacey, Calif. Institute of Technology, Pasadena; R. N. McMaster, Chanslor-Canfield Midway Oil Co., Los Angeles; M. A. Machris, Wilshire Oil Co., Los Angeles; F. A. Morgan, Richfield Oil Corp., Los Angeles; R. C. Patterson, U. S. Geological Survey, Taft, Calif.; E. E. Pyles, Hancock Oil Co., Long Beach, Calif.; C. P. Watson, Seaboard Oil Co., Los Angeles; H. T. Wyatt, Shell Oil Co., Inc., Los Angeles; W. C. Whaley, Barnsdall Oil Co., Los Angeles.

## Santa Clara Finishes Shiells Canyon Project

The Santa Clara Petroleum Co. has completed its Calumet No. 1 well in Shiells Canyon, Ventura County at a depth of 3245 feet. 9⅝" casing was cemented at 2400 feet and 6⅝ perforated liner set at 3245 feet. The well was reported flowing 500 bbls. a day a few hours after completion.

A new sub-lease to Santa Clara Petroleum Company on a portion of the Calumet Oil Co.'s 800 acres was made when the Savage Oil Co. quitclaimed all right, title and interest in and to the property, according to Calumet officials.

## J. B. Reilly Attends Rotary at Havana

John B. Reilly, president of Fluid Packed Pump Co., Los Nietos, Calif., left recently for Havana, Cuba, to attend the International Convention of Rotary being held in that city. Accompanying him on his trip were his wife and family.

At the convention, Mr. Reilly was installed as Rotary Governor of District 108, an office to which he was elected at a recent district convention held in Long Beach, Calif. Mr. Reilly, a member of the Whittier Rotary Club, expects to return to California June 20.

## Jergins "Hold Out" Testing Gas Sands

Still masking operations in a cloud of mystery, the Jergins Oil Co.'s Cheney Ranch No. 1, located in sec. 29,14-13 of Mendota area in Fresno county, is reported testing what are believed to be gas sands. Drilled to 9345 ft., the well has been plugged to 7000 ft. and a liner landed on bottom and cemented through perforations for the test. Several days intermittent swabbing resulted in no appreciable follow-up.

Early tests near 6700 ft. were inconclusive and it is thought that this try may be the first of a series of up hole tests in an effort to determine the ultimate disposition of the well.

## Informative Booklet Issued by A. O. Smith

Another proof of the ability of A. O. Smith Corp. to elucidate knotty problems with clarity and simplicity is its latest booklet "How To Save On Casing With Safety." The plain facts for the petroleum engineer are given in design data charts for casing strings (threaded and coupled), and for surface casing strings (butt, sleeve, bell and spigot, and double bell type joints). An example of a casing program designed to effect a savings of $1000 is worked out in detail.

For those who like to know "the authorities" for statements presented, the booklet provides an interesting history of A. O. Smith Corp. industrial activities and achievements.

## New Nordstrom Valve Price List

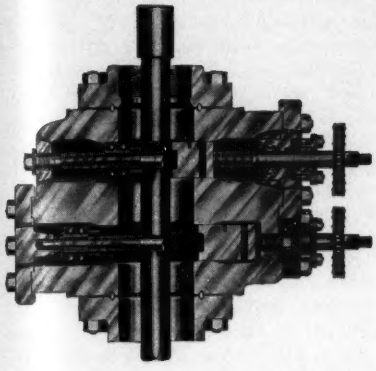
A new 48-page condensed price list, Bulletin V-109, covering all types and sizes of Nordstrom valves has just been issued by Merco Nordstrom Valve Co.

A comprehensive pressure rating index by metals to Nordstrom valve bulletins is included in the forepart of this bulletin. By referring to this index, quick determination of the proper valve figure number to meet various conditions of pressure, pipe size, connections and method of operation can be found. This index also lists the bulletin number and page on which each figure number is catalogued.

Copies of this price list can be obtained by addressing Merco Nordstrom Valve Co., 400 N. Lexington Avenue, Pittsburgh, Penn.

## Double Gate to Provide Complete Drilling Control

A Double Cellar Control Gate has recently been designed by Shaffer Tool Works, Brea, Calif., for use where the vertical space available is so small that it is desirable to reduce even the very small space required for two single gates and the connecting spool between. The two



ram compartments comprising the Shaffer Double Cellar Control Gate are constructed with the upper compartment having rams to close around the pipe and the lower compartment equipped with rams for a complete shut-off when the pipe is out of the hole. The vertical space required by the double gate is approximately half that required for two single gates and their connecting spool. The double gate itself is less in height than two single gates alone.

The rams in the upper compartment are self centering and center small size drill pipe in the bore of the gate as they close around it. They are made with protruding angular guides alternately top and bottom and as the rams move toward their closed position these guides engage the drill pipe and move it into central position in the ram. The angular guides telescope into the opposite ram block which permits the abutting faces of the ram blocks to seal perfectly. Ram rubbers may be either rubber or Neoprene.

The upper compartment with the self centering rams for closing around pipe has the end cover located at the front face of the gate body. On the inside of this end cover are bosses for the reception of annular thrust ball bearings. These bearings are an important factor in reducing the friction that is caused by the end thrust on the collar of the operating screws caused by well pressure. The ram assembly in the upper compartment is removed from the front end, while the end cover for the removal of the ram assembly in the lower compartment is at the rear end of the gate.

Bolted to the front face of the gate are thrust plates with ball bearings for the operating screws of the lower gate. The extension of the operating screws of both the upper and lower compartments are on the same end of the double gate and remote control can be used in the same manner as when two gates are used.

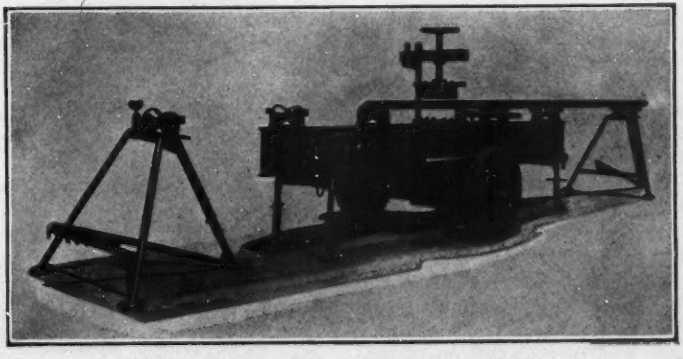
The Shaffer Double Cellar Control Gates can be furnished in sizes from 6⅝" to 11¾" inclusive. Dimensions and weights will be furnished on request.

## Shaffer Hydraulic Pipe Straightener

A Portable Pipe Straightener has been introduced by Shaffer Tool Works, Brea, Calif., to provide a means of straightening bent or kinked pipe at the well. The straightening device is hydraulically operated and the entire assembly embodies all the latest features of a strictly modern pipe straightening machine. The unit is mounted on springs attached to the axle and is equipped with trailer hitch which provides for it being drawn by an ordinary small truck. The assembly is carried on automobile tires and its entire construction makes it easy to transport to and from different wells on a lease, or to wells scattered over a wide area and for wildcat operations.

The Shaffer Portable Pipe Straightener is power driven and is equipped with a ¾ horsepower AC or DC reduction gear motor. Gasoline, gas or butane motors can also be furnished if operating conditions make it necessary to utilize such power. The hydraulic power is supplied by an 8" diameter hydraulic ram actuated by a double piston pump with ¾" pistons and 4" stroke operating at 125 R.P.M. The ram is controlled by a valve and when the pressure is released the return is made by heavy coil springs. Oil is used for fluid and is kept in a reservoir chamber. The oil supply is always ready for use and there is no loss of fluid during operations.

The frame of the Shaffer Portable Pipe Straightener is constructed of two 15"-50 lb. I-beams, 15 feet in length. An outstanding feature is that it is designed with a side opening on the ram bracket which makes it possible to roll pipe on and off the machine. This eliminates handling the pipe through the end only and is one of the many of its labor-saving features. Each end of the straightener is equipped with stationary, adjustable jacks that make it easy to level up and hold the machine in a stable position without the use of wooden cribbing or other makeshift supports. Two portable roller stands are furnished, one for each end of the machine, and these are designed so that they can be raised or lowered to keep the pipe level throughout its length.



## Republic Booklets on Enduro Stainless Steels

Four new booklets on Enduro Stainless and Heat-Resisting Steels have just been released by Republic Steel Corp., Cleveland, Ohio. Profusely illustrated, printed in two colors and completely up to the minute in factual data on Republic's wide range of stainless steels, these booklets have met with heavy demand on the part of buyers, engineers, designers and fabricators of equipment.

"Republic Enduro Stainless and Heat-Resisting Steels"—Form ADV 361—28-page booklet general in nature and describing the properties and applications of Enduro in many fields of industry.

"Enduro—18-8 Types"—Form ADV 362—describes the properties, fabrication, corrosion-resistance and applications of Enduro 18-8 and its several variations. This 24-page booklet contains a chart showing specific properties of 13 of the more common types of Enduro contrasted with carbon steel. Another interesting feature is a table showing corrosion-resistance of 3 types of stainless in the presence of more than 200 corrosive media.

"Enduro—Types AA, AA-FM, S-1 and FC"—Form ADV 363—a 24-page booklet describing properties, fabrication and application of these straight-chromium types of Enduro Stainless steel. Also contains corrosion table and chart of properties.

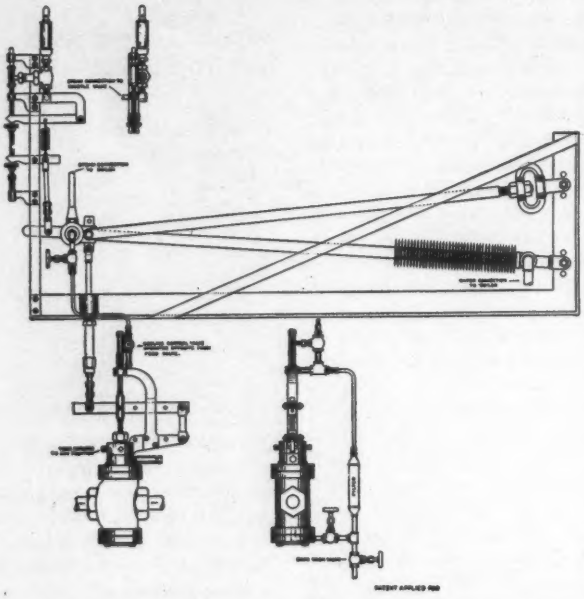
"Enduro—Types HCN, NC-3 and HC"—Form ADV 364—a 16-page booklet de-

scribing the heat-resisting, high strength types of Enduro. Lists properties and gives fabrication details on these three types.

## Feed Water Controller Accelerator Attachment

A new principle is embodied in a feed water level controller developed by J. A. Campbell Co., by a simple accelerator attachment. A small stream of water is fed into the control tube at its hot end, increasing valve motion through changing the temperature of the entire tube by positive volume control. In addition to maintaining precise control of boiler feed water, this controller, without its new accelerator attachment, permits blowing the control tube without throwing the apparatus out of adjustment. Thus a simple method is provided for cleaning the control tube of scale or other accumulations, regardless of the temperature of the feed water. Cooling is accomplished through the extraction of heat from the tube. The cooling water, taken from the feed valve on the upstream side, has full differential pressure to force it into the tube. This differential varies with the opening of the feed valve. A small filter can be washed and freed of scale or other intruding elements. Only a few seconds are required to wash the line. By inclusion of the accelerator control, this boiler feed water controller can be flushed in a few seconds, without disturbing the water level in the boiler. The lower end of the thermostatic tube on the controller is finned, which greatly increases sensitivity. Movement of the operating mechanism is inevitable when the water level rises or falls in the tube. A novel feature is the audible signal system. The controller can be equipped with either a whistle or an electric alarm so that if the boiler pump should fail, or pump packing become lodged under the valve, a whistle or electric bell sounds a warning.

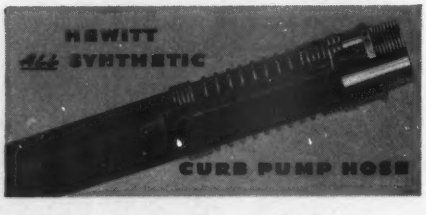
Further details regarding the new accelerator attachment and the controller can be obtained from the manufacturer, J. A. Campbell Co., 645 East Wardlow Road, Long Beach, California.



## Hewitt Hewprene Prevents Weather Checking

After more than eight years of exhaustive research and constant service tests, the Hewitt Rubber Corp. of Buffalo, New York, announces the development of Maltese Cross Hewprene **All**-Synthetic, Oil-Proof Rubber Curb Pump Hose.

The use of Hewprene synthetic rubber throughout the entire hose, including not only the inner tube but also the ply insulation and the outer cover, marks an important advance in basic construction principle and provides many advantages which lengthen service life and increase operating efficiency.




The smooth oil-proof synthetic inner lining saves time by increasing the rate of flow and prevents product discoloration or contamination.

The use of Hewprene synthetic rubber both in the ply insulation of the hose wall and in the outer cover provides added protection against evaporation loss and ply separation. Tests show that this all-synthetic construction gives more than twice the resistance to permeation by gasoline that hose does of the same thickness built of natural rubber with only a synthetic lining, says the manufacturers.

Further tests also show that the use of Hewprene synthetic rubber in the cover of this new hose prevents the weather "checking" or cracking which eventually occurs with all **natural** rubber compounds—under any conditions of climate. This cracking frequently is a major source of loss since it permits rapid evaporation of gasoline, and permits moisture to enter the cover, eventually penetrating into the cotton plies to cause mildewing, rotting, and ply separation. In freezing weather, hose which has thus absorbed moisture becomes stiff and difficult to handle whereas Hewprene-covered hose cannot absorb moisture and therefore retains its full flexibility. Cover cracking also promotes rapid oxidation of the rubber and frequently causes corrosion and breakage of the static wire.

Another major advantage of this new **All**-Hewprene construction is the elimination of swelling and ply separation frequently caused by minor leaks at the pump connection and couplings or by drippage from the filling nozzle.

Maltese Cross Hewprene Curb Pump Hose is attractive and easily cleaned. It is light, flexible, and easy to handle. There is no stiff hard outer cover to mar polished car finishes—and there is no need for protecting rings at the loop.

●

Watch for the

CNGA

Spring Frolic

Pictures

Second Issue

June

California Oil World

●

# Production « « » » Development

(Figures of Production and Stocks are in barrels of 42 Gals.)

| | Total Production April | —DAILY AVERAGE— Apr., 1940 | Mar., 1940 | Apr., 1939 |
|---|---|---|---|---|
| **Group No. 1** | | | | |
| Arvin | 59,854 | 1,995 | 2,271 | 456 |
| Belridge—North | 327,771 | 10,926 | 11,077 | 11,554 |
| Belridge—South | 60,303 | 2,010 | 1,974 | 1,112 |
| Canal | 176,851 | 5,895 | 5,668 | 4,261 |
| Canfield Ranch | 1,684 | 56 | 49 | 35 |
| Coalinga | 766,550 | 25,552 | 23,178 | 11,142 |
| Cole's Levee | 108,257 | 3,608 | 3,346 | 292 |
| Edison | 68,602 | 2,287 | 2,256 | 2,306 |
| Elk Hills | 372,622 | 12,420 | 12,446 | 9,892 |
| Fruitvale | 176,324 | 5,877 | 5,758 | 6,776 |
| Greeley | 107,299 | 3,577 | 3,440 | 1,621 |
| Kern River | 352,329 | 11,744 | 11,017 | 11,149 |
| Kettleman Middle Dome | ..... | ..... | ..... | 34 |
| Kettleman North Dome | 1,412,583 | 47,086 | 47,437 | 53,057 |
| Lost Hills | 126,081 | 4,203 | 4,191 | 3,305 |
| McKittrick | 107,077 | 3,659 | 3,554 | 2,940 |
| Midway-Sunset | 1,550,483 | 51,683 | 52,136 | 52,956 |
| Mountain View | 218,734 | 7,291 | 6,683 | 8,428 |
| Mount Poso | 292,745 | 9,758 | 9,435 | 13,123 |
| Paloma | 5,576 | 186 | 182 | ..... |
| Rio Bravo | 256,266 | 8,542 | 7,996 | 8,398 |
| Round Mountain | 218,599 | 7,287 | 7,376 | 10,930 |
| Strand | 41,913 | 1,397 | 1,416 | 8,652 |
| Ten Section | 266,665 | 8,889 | 8,701 | ..... |
| Tupman | 49,174 | 1,639 | 1,087 | 519 |
| Wasco | 43,971 | 1,466 | 1,291 | 719 |
| Wheeler Ridge | 9,444 | 315 | 308 | 321 |
| **Group No. 2** | | | | |
| Capitan | 55,956 | 1,865 | 1,916 | 2,484 |
| Elwood | 111,802 | 3,727 | 3,833 | 4,257 |
| Rincon | 121,778 | 4,059 | 3,761 | 2,915 |
| San Miguelito | 95,362 | 3,179 | 3,048 | 2,413 |
| Santa Barbara | 7,384 | 246 | 331 | 280 |
| Santa Maria | 116,589 | 3,886 | 4,620 | 7,350 |
| Santa Maria Valley | 550,765 | 18,359 | 12,405 | 11,227 |
| Summerland | 714 | 24 | 28 | 31 |
| Ventura Avenue | 979,286 | 32,643 | 34,307 | 33,194 |
| Ventura-Newhall | 216,170 | 7,206 | 7,377 | 5,940 |
| Watsonville | 750 | 25 | 25 | 30 |
| **Group No. 3** | | | | |
| Brea-Olinda | 175,262 | 5,842 | 5,618 | 5,565 |
| Coyote—East | 118,488 | 3,950 | 3,341 | 2,241 |
| Coyote—West | 186,497 | 6,217 | 6,514 | 7,712 |
| Domingues | 615,065 | 20,502 | 19,452 | 21,148 |
| El Segundo | 72,304 | 2,410 | 2,379 | 3,302 |
| Huntington Beach | 810,209 | 27,007 | 27,320 | 29,167 |
| Inglewood | 373,192 | 12,440 | 12,865 | 11,697 |
| Lawndale | 1,201 | 40 | 44 | 67 |
| Long Beach | 1,345,666 | 44,856 | 44,295 | 48,559 |
| Los Angeles-Salt Lake | 15,675 | 523 | 527 | 493 |
| Montebello | 621,759 | 20,725 | 20,355 | 15,496 |
| Playa Del Rey | 131,434 | 4,381 | 4,240 | 5,201 |
| Potrero | 56,495 | 1,883 | 1,701 | 954 |
| Richfield | 279,950 | 9,331 | 9,227 | 8,552 |
| Rosecrans | 283,817 | 9,461 | 9,720 | 13,533 |
| Santa Fe Springs | 780,399 | 26,013 | 25,876 | 27,791 |
| Seal Beach | 216,420 | 7,214 | 7,320 | 7,356 |
| Torrance | 349,361 | 11,645 | 12,035 | 21,721 |
| Whittier | 29,105 | 970 | 1,001 | 970 |
| Wilmington | 2,506,821 | 83,561 | 82,581 | 87,838 |
| Total | 18,403,433 | 613,448 | 602,334 | 613,462 |
| March | 18,672,342 | 602,334 | | |
| Increase (*Decrease) | 268,909* | 11,114 | | |

**SUMMARY OF CALIFORNIA OILFIELD OPERATIONS FOR APRIL, 1940**

**STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES**

| | April 30, 1940 | March 31, 1940 | April Changes | April 30, 1939 |
|---|---|---|---|---|
| 1. Gasoline-Bearing Crude | 35,835,610 | 35,804,861 | + 30,749 | 39,530,900 |
| 2. Non-Gasoline-Bearing Crude | 13,520,733 | 13,499,792 | + 20,941 | 15,195,794 |
| 3. Unblended Nat. Gas | 2,020,627 | 1,875,107 | + 145,520 | 2,201,339 |
| 4. Gasoline (not including distributing and service stations) | 17,645,918 | 17,712,442 | − 66,524 | 15,400,469 |
| 5. Naphtha Distillates | 1,585,311[1] | 1,565,034[1] | + 20,277 | 1,407,569[1] |
| 6. Gas Oil and Diesel Oil | 9,679,406 | 9,326,881 | + 352,525 | 10,826,518 |
| 7. Fuel Oil Residuum | 65,346,750 | 64,947,259 | + 399,491 | 70,877,903 |
| 8. All Other Stocks | 8,494,606[2] | 8,388,953[2] | + 105,653 | 6,656,202[2] |
| TOTAL | 154,128,961 | 153,120,329* | +1,008,632 | 162,096,694 |
| [1]Estimated amount of unfinished gasoline contained in item 5 | 1,414,293 | 1,366,700 | | 1,210,404 |
| [2]Coke included in item 8 | 1,200,358 | 1,146,960 | | 222,379 |

| | New Rigs Up | Producers Active Drilling | Com-pleted | Daily Initial Output | Active Pro-ducing | Abandoned Wells Drillers | Pro-ducers |
|---|---|---|---|---|---|---|---|
| **Group No. 1** | | | | | | | |
| Arvin | .. | .... | .... | .... | 15 | .... | .... |
| Belridge—North | 3 | 2 | 1 | 304 | 79 | .... | .... |
| Belridge—South | .. | .... | .... | .... | 163 | .... | .... |
| Canal | 1 | 1 | 1 | 890 | 33 | .... | .... |
| Canfield Ranch | .. | .... | .... | .... | 1 | .... | .... |
| Coalinga | 9 | 23 | 5 | 6,459 | 887 | .... | .... |
| Cole's Levee | 1 | 4 | .... | .... | 20 | 1 | .... |
| Edison | .. | .... | .... | .... | 93 | .... | 1 |
| Elk Hills | .. | .... | .... | .... | 194 | .... | .... |
| Fruitvale | .. | 1 | .... | .... | 170 | .... | .... |
| Greeley | .. | 6 | 1 | 3,380 | 28 | .... | .... |
| Kern River | 6 | 6 | 6 | 30 | 1,549 | 2 | .... |
| Kettleman Middle Dome | .. | .... | .... | .... | .... | .... | .... |
| Kettleman North Dome | .. | 12 | 7 | 7,966 | 254 | .... | .... |
| Lost Hills | .. | .... | .... | .... | 357 | .... | .... |
| McKittrick | 1 | 2 | .... | .... | 208 | .... | .... |
| Midway-Sunset | 2 | 3 | 4 | 556 | 2,600 | 2 | 1 |
| Mountain View | .. | .... | .... | .... | 186 | .... | .... |
| Mount Poso | 3 | 2 | 2 | 140 | 275 | 1 | .... |
| Paloma | .. | 2 | .... | .... | 1 | .... | .... |
| Rio Bravo | 2 | 4 | 3 | 4,280 | 47 | .... | .... |
| Round Mountain | 1 | 1 | .... | .... | 220 | .... | .... |
| Strand | .. | 1 | 1 | 1,688 | 8 | .... | .... |
| Ten Section | 1 | 3 | 1 | 966 | 45 | .... | .... |
| Tupman | 9 | 8 | 3 | 4,732 | 8 | .... | .... |
| Wasco | 1 | .... | 2 | 6,379 | 11 | .... | .... |
| Wheeler Ridge | .. | 1 | .... | .... | 34 | .... | .... |
| **Group No. 2** | | | | | | | |
| Capitan | .. | .... | .... | .... | 43 | .... | .... |
| Elwood | .. | .... | .... | .... | 72 | .... | .... |
| Rincon | 2 | .... | 2 | 423 | 62 | .... | 1 |
| San Miguelito | .. | 1 | 1 | 2,240 | 19 | .... | .... |
| Santa Barbara | .. | .... | .... | .... | 21 | .... | 2 |
| Santa Maria | 1 | .... | 1 | 51 | 162 | .... | .... |
| Santa Maria Valley | 1 | 1 | .... | .... | 142 | .... | .... |
| Summerland | .. | .... | .... | .... | 8 | .... | .... |
| Ventura Avenue | 4 | 12 | 3 | 7,340 | 315 | .... | .... |
| Ventura-Newhall | 3 | 8 | 1 | 264 | 567 | 2 | 1 |
| Watsonville | .. | .... | .... | .... | 7 | .... | .... |
| **Group No. 3** | | | | | | | |
| Brea-Olinda | .. | .... | .... | .... | 359 | .... | .... |
| Coyote—East | 1 | 1 | .... | .... | 79 | .... | .... |
| Coyote—West | .. | 1 | .... | .... | 60 | .... | .... |
| Domingues | 5 | 3 | 4 | 3,493 | 191 | .... | 1 |
| El Segundo | .. | .... | .... | .... | 46 | .... | 1 |
| Huntington Beach | 6 | 2 | 2 | 536 | 531 | .... | .... |
| Inglewood | .. | 1 | .... | .... | 208 | .... | .... |
| Lawndale | .. | .... | .... | .... | 5 | .... | .... |
| Long Beach | .. | 5 | 3 | 325 | 1,214 | 2 | 6 |
| Los Angeles-Salt Lake | .. | .... | .... | .... | 103 | .... | 4 |
| Montebello | 2 | 7 | 4 | 1,214 | 361 | .... | .... |
| Newport | .. | .... | .... | .... | .... | .... | 2 |
| Playa Del Rey | .. | .... | .... | .... | 156 | .... | 2 |
| Potrero | .. | 1 | .... | .... | 18 | .... | 1 |
| Richfield | .. | 1 | 1 | 75 | 302 | .... | .... |
| Rosecrans | 3 | 8 | 2 | 540 | 149 | .... | 2 |
| Santa Fe Springs | .. | .... | .... | .... | 580 | .... | 3 |
| Seal Beach | 1 | .... | 1 | 1,185 | 118 | .... | 1 |
| Torrance | .. | 1 | .... | .... | 694 | 2 | 8 |
| Whittier | .. | 1 | .... | .... | 142 | .... | .... |
| Wilmington | 6 | 11 | 17 | 5,893 | 317 | .... | .... |
| Miscellaneous Drilling | 9 | 35 | .... | .... | .... | 7 | .... |
| **Group No. 4—Gas Fields** | | | | | | | |
| Buena Vista Lake | .. | .... | .... | .... | 4 | .... | .... |
| Buttonwillow | .. | .... | .... | .... | 9 | .... | 1 |
| Chowchilla | .. | .... | .... | .... | .... | .... | .... |
| Delano | .. | .... | 1 | Gas | 13 | .... | .... |
| Dudley Ridge | .. | .... | .... | .... | .... | .... | 1 |
| Fairfield Knolls | .. | .... | .... | .... | .... | .... | .... |
| Goleta | .. | .... | .... | .... | .... | .... | .... |
| Marysville Buttes | .. | 1 | .... | .... | 3 | .... | .... |
| McDonald Island | .. | .... | .... | .... | 5 | .... | .... |
| Rio Vista | .. | .... | .... | .... | 23 | .... | .... |
| Semi-Tropic | .. | .... | .... | .... | .... | .... | .... |
| Tracy | .. | .... | .... | .... | 4 | .... | 1 |
| April | 84 | 183 | 80 | 61,349 | 15,098 | 19 | 40 |
| March | 105 | 191 | 72 | 47,064 | 14,996 | 8 | 18 |
| Increase (*Decrease) | 21* | 8* | 8 | 14,285 | 102 | 11 | 22 |

# Business and Professional Directory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of
CALIFORNIA

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Central Committee of California Oil Producers, meeting on April 23, recommended that the state's production level be maintained at 592,000 barrels daily, the same as for the two preceding months.

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Reports from Washington, D. C. indicate that the Navy Department and the Department of Justice are making every effort to establish a basis for claiming Federal jurisdiction over California's tidelands and oil producing submerged lands.

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You are reading the Pacific Coast oil men's home paper.


**MAPS**

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## Oil Men's Calendar

Calif. Natural Gasoline Association. **Los Angeles Chapter**—Meets 1st Thursday Each Month, Barker Bros. Bldg., Los Angeles—Dinner at 6:00 (Optional). **Taft Chapter**—Meets Third Thursday Each Month.

American Society of Mechanical Engineers—Los Angeles Section—Meets 2nd Thursday Each Month—Barker Bros. Bldg., Los Angeles. Dinner at 6:30 (Optional).

**June**

17-20—American Society of Mechanical Engineers, Milwaukee, Wisc.

24-28—American Society for Testing Materials, Chalfonte-Haddon Hall, Atlantic City, N. J.

**July**

5th Calif. Natural Gasoline Assn.—**Los Angeles Chapter**—Barker Bros. Bldg., Los Angeles. Dinner at 6:00 (Optional)

**September**

18, 19, 20th—Pacific Coast Gas Assn.—Annual Convention, Coronado, Calif.

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Latest technological trends in the processing of natural gas and the manufacture of natural gasoline will be featured at the 19th annual convention of the Natural Gasoline Association of America. The convention will be held in Tulsa, May 15 to 17.

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You are reading the Pacific Coast oil men's home paper.

## California Crude Oil Production

**Three Weeks Ended May 31, 1940**

| | May Daily Quota | Average Daily Production | Excess |
|---|---|---|---|
| **San Joaquin Valley** | | | |
| Belridge—North | 11,770 | 10,659 | *1,111 |
| Belridge—South | 2,134 | 2,079 | *55 |
| Buena Vista | 16,358 | 16,442 | 84 |
| Canal | 5,785 | 5,771 | *14 |
| Coalinga-E. (Eocene) | 15,414 | 16,310 | 896 |
| Coalinga—East-West | 15,226 | 10,060 | *5,166 |
| Cole's Levee | 4,989 | 5,406 | 417 |
| Edison | 2,209 | 2,235 | 26 |
| Elk Hills | 6,911 | 12,269 | 5,358 |
| Fruitvale | 5,700 | 5,371 | *329 |
| Greeley | 3,709 | 4,189 | 480 |
| Kern Front | 7,207 | 6,483 | *724 |
| Kern River | 6,793 | 4,073 | *2,720 |
| Kettleman No. Dome | 35,062 | 47,869 | 12,807 |
| Lost Hills | 3,926 | 3,999 | 73 |
| McKittrick | 3,747 | 3,474 | *273 |
| Midway | 36,981 | 33,276 | *3,705 |
| Mount Poso | 9,316 | 9,099 | *217 |
| Mountain View | 8,081 | 8,419 | 338 |
| Rio Bravo | 8,352 | 8,160 | *192 |
| Round Mt. and Coffee Canyon | 7,018 | 7,405 | 387 |
| Ten Section | 9,070 | 8,786 | *284 |
| Wasco | 1,571 | 1,365 | *206 |
| Other Fields | 3,607 | 4,255 | 648 |
| TOTAL | 230,936 | 237,454 | 6,518 |
| **Coastal Counties** | | | |
| Elwood | 3,546 | 3,659 | 113 |
| Rincon | 2,626 | 3,915 | 1,289 |
| Santa Maria | 5,015 | 3,177 | *2,838 |
| Gato Ridge | 2,226 | 2,416 | 190 |
| Santa Maria Valley | 17,624 | 16,474 | *1,150 |
| Santa Paula-Newhall | 5,726 | 6,634 | 908 |
| Ventura Avenue | 31,910 | 34,033 | 2,123 |
| Other Fields | 5,332 | 5,264 | *68 |
| TOTAL | 75,005 | 75,572 | 567 |
| **Los Angeles Basin** | | | |
| Alamitos-Seal Beach | 7,175 | 6,919 | *256 |
| Brea-Olinda | 7,862 | 5,313 | *2,549 |
| Coyote—East | 3,505 | 3,684 | 179 |
| Coyote—West | 10,058 | 6,343 | *3,715 |
| Domingues | 17,338 | 20,488 | 3,150 |
| El Segundo | 2,226 | 2,310 | 84 |
| Huntington Beach—New and Old | 22,741 | 25,164 | 2,423 |
| Inglewood | 12,201 | 11,951 | *250 |
| Long Beach | 39,057 | 43,338 | 4,281 |
| Montebello | 5,907 | 5,161 | *746 |
| Montebello-West End | 18,647 | 17,025 | *1,622 |
| Playa del Rey | 3,895 | 4,080 | 185 |
| Richfield | 7,043 | 8,203 | 1,160 |
| Rosecrans-Athens | 7,987 | 9,079 | 1,092 |
| Santa Fe Springs | 23,793 | 25,973 | 2,180 |
| Torrance | 5,117 | 4,919 | *198 |
| Torrance "34" and "D & B" | 6,097 | 6,370 | 273 |
| Wilmington | 78,970 | 83,401 | 4,431 |
| Other Fields | 3,980 | 4,211 | 231 |
| TOTAL | 283,699 | 293,932 | 10,233 |
| STATE TOTAL | 589,640 | 606,958 | 17,318 |

*—Shortage.